GENERAL ELECTRIC SERVICE INFORMATION

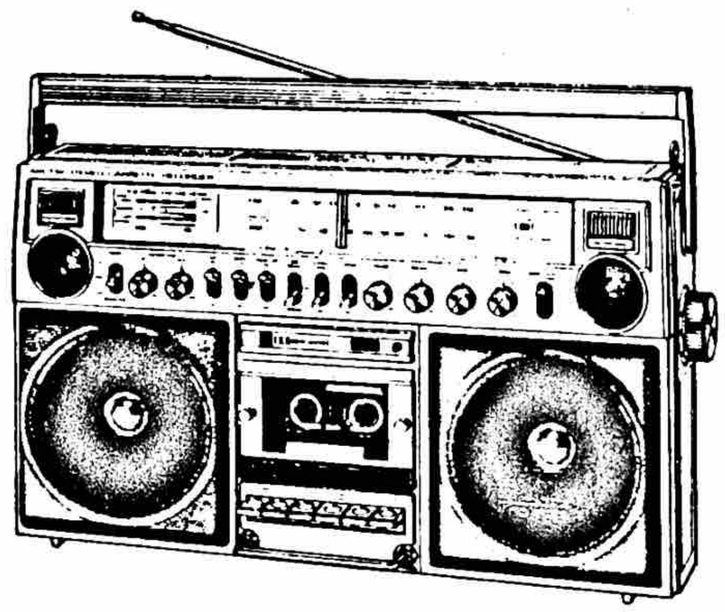
MODEL
3-5286A
AM/FM/FM STEREO
CASSETTE RECORDER

FILE TAB 3

CAUTION: THIS MANUAL IS DESIGNED FOR USE BY QUALIFIED ELECTRONIC TECHNICIANS ONLY. CONSUMER USERS ARE URGED TO CONTACT QUALIFIED FACTORY AUTHORIZED SERVICE FACILITIES FOR REPAIRS.

FEATURES

● Solid state AM/FM/FM Stereo Cassette Recorder● Dolby "B" noise reduction with On/Off switch● Two-way dynamic speaker system - 5" woofer and 2" tweeter● Tape select switch for Normal, CrO2, and metal tape● Dual LED electronic meter with switchable 3-way function: left and right record/play level indicator, battery level, AM and FM tuning● Cushion eject● Two Antenna System: telescopic whip antenna for FM and ferrite rod antenna for AM● 3 Way power capability: Detachable AC line cord, eight "D" cell batteries (not incl.), and car adapter (optional)● Switchable AC power for 120V AC or 220V AC operation● Stereo Accent switch● Loudness compensation switch● AM beat Osc. switch● Jack for optional accessories: Ext. DC power, Ext. Speakers, Microphones, remote On-Off, Aux inputs, & 1/4" stereo headphone jack.



WARNING: Set the voltage selector switch located in battery compartment to the proper voltage position before connecting unit to any AC electrical outlet.

SERVICE SPECIFICATIONS

ELECTRICAL

Power Options [B+ = 12V DC]	Switchable Line Cord: 120V AC, 60Hz or 220V AC, 50Hz Battery, 8 "D" cells Car Adapter, 5-1062	
Voltage Operating Range	AC - 105 to 130V, 60Hz or 198 to 240V, 50Hz DC - 8.8 to 13.5V DC	
Max. Current Drains [Min. Volume, No Signal C60 Cassette Tape installed with tape evenly distributed on both reels & meter switch in "Off]	AM Radio	135 mA
	FM Radio	160 mA
	FM Stereo	165 mA
	Play	180 mA
	Rewind	210 mA
	Fast Forward	200 mA
	Record & FM Stereo	260 mA
Speaker Impedance	Woofer, 4Ω Tweeter, 4Ω	
Min. Volume Hum (120V AC Line Cord Operated	6.0 uw	
Audio Output @ 10% thd. per channel	3.5 w	

AM RADIO

Tuning Range	520 - 1615 KHz
Sensitivity @ 20 db Quieting	450 uv/M Max.
I.F.	455 KHz
Image Ratio	40 db Min.

FM RADIO

Tuning Range	88.0 - 108.3 MHz
Sensitivity @ 30 db Quieting	15 uv Max.
I.F.	10.7 MHz
Image Ratio	30 db Min.
Stereo Ch. Separation	18 - 25 db

TAPE RECORDER

Tape Speed	1 7/8 i.p.s. ±3%
Record Bias	AC
Erase System	AC
Erase Ratio	48 db Min.
Cross Talk	55 db Min.
Wow & Flutter	.30% RMS jis unweighted
Playback Freq. Response	125 - 8000 Hz ±6db
Overall P/R Freq. Response	100 -.8000 Hz ±6db
S/N Ratio	44 db Min.

CABINET BACK REMOVAL

1. Remove battery door and eight (8) "D" cell batteries.
2. Remove six (6) cabinet back mounting screws located in screw well holes.
3. Carefully remove cabinet back and disconnect FM antenna lead from tuner board.

CABINET TOP PANEL REMOVAL

1. Perform "Cabinet Back Removal", steps (1-3).
2. Unfasten mounting tab located in middle of cabinet top and at the same time lift upward on rear-middle edge of cabinet top panel.

CABINET FRONT REMOVAL

1. Perform "Cabinet Back Removal", steps (1-3) and "Cabinet Top Panel Removal", steps (1-2).
2. Remove one (1) mounting screw located in battery compartment well.
3. Remove Treble, Bass, Balance, Volume, Record level right and left control knobs.
4. Remove two (2) thumb screws from left and right side of cassette lid front.
5. Remove cassette lid and cassette lid window.
6. Carefully remove cabinet front and disconnect speaker plug from cabinet front for easier servicing of unit.

TO SERVICE TAPE MECHANISM

"PARTS ABOVE BASEPLATE"

1. Perform "Cabinet Front Removal", steps (1-6).
2. Depress Stop/Eject button, allowing tape cassette lid frame to be in "Open" position.
3. Remove two (2) Supply/Take-up reel graphic insert bracket mounting screws.
4. Carefully lift upward on Supply/Take-up reel insert bracket until it is free from its position, then rotate it counterclockwise until it is clear of tape mechanism.

"PARTS BELOW BASEPLATE"

1. Perform "Cabinet Front Removal", steps (1-6).
2. Remove six (6) tape-mechanism mounting screws listed below, as viewed from the front side:
   - One (1) located above tape digital counter.
   - One (1) located between take-up reel and tuning drum.
   - One (1) located below Pause button.
   - One (1) located below Rewind/Review button.
   - One (1) located on motor mounting bracket.
   - One (1) located upper-left hand corner from supply reel.
3. Remove tape mechanism by lifting upward on unit near Fast Forward/Preview button.

   NOTE: When remounting tape mechanism, be sure Play/Record switch actuator lever and spring are properly seated.

TO SERVICE TUNER CIRCUIT BOARD

To simplify servicing of tuner board, troubleshoot from the component side of circuit board whenever possible, using "Component Layout Tuner Board - Top View". The majority of parts may be removed from the tuner board by performing "Cabinet Front Removal", steps (1-6). Extreme care must be used when using a soldering iron not to come in contact with dial cord string.

TO SERVICE TUNER CIRCUIT BOARD (Con'd)

Removal of the circuit board may be necessary to remove a defective component not accessible from the front, proceed as follows:

1. Perform "Cabinet Front Removal", steps (1-6).
2. Turn Tuning knob until dial pointer is at Low end of scale.
3. Remove tuning drum screw.
4. Remove five (5) mounting screws from component side of circuit board.
5. Unplug flex connector leads from control circuit board (optional).
6. Carefully remove circuit board from unit.

   NOTE: When remounting circuit board, set tuning capacitor fully counterclockwise, rock tuning knob back and forth until tuning drum and tuning capacitor shaft are properly seated.

TO SERVICE POWER AMP CIRCUIT BOARD

To simplify servicing of circuit board, troubleshoot from the conductor side of board whenever possible, using "Wiring Diagram Power Amp Board - Bottom View". The majority of parts may be removed from the circuit board by performing "Cabinet Front Removal", steps (1-6).

Removal of the circuit board may be necessary to remove a defective component not accessible from the front, proceed as follows:

1. Disconnect speaker plug from cabinet front.
2. Disconnect flex connector leads from control circuit board.
3. Remove four (4) mounting screws from component side of circuit board.
4. Lift upward on AC power socket/External DC power jack until it is free from side mounting slot.
5. Carefully lift upward on circuit board to expose entire conductor side of board.

   NOTE: The circuit board may be totally removed from unit by disconnecting both red secondary leads from AC power transformer and AC/DC power jack plug.

TO SERVICE CONTROL CIRCUIT BOARD

To simplify servicing, it will be necessary to partially remove circuit board assembly from front of unit before attempting to troubleshoot or remove a defective component, proceed as follows:

1. Perform "Cabinet Front Removal", steps (1-6).
2. Remove six (6) dial scale mounting screws.
   - One (1) located near left internal microphone.
   - One (1) located near right internal microphone.
   - One (1) located between Bass and Treble controls.
   - One (1) located between Loudness switch and volume control.
   - One (1) located between Stereo Accent and loudness control.
   - One (1) located between left and right record level controls.
3. Carefully lift upward on dial pointer, until it is free of dial scale mounting bracket.

TO SERVICE CONTROL CIRCUIT BOARD (Cont'd)

4. Remove dial scale mounting bracket and let it hang loosely by its connecting leads.
5. Carefully slide circuit board assembly out from front of set just far enough for servicing, leaving all flex connections and plugs attached.

NOTE: The control circuit board can be completely removed from the set by performing the above steps (1-5) and disconnecting all flex leads and plugs.

Extreme care must be used when using a soldering iron, not to come in contact with dial cord string.

TO SERVICE DOLBY CIRCUIT BOARD

To simplify servicing of circuit board, troubleshoot from the component side of circuit board whenever possible using "Component Layout Dolby Circuit Board - Top View". It will be necessary to partially remove Control Circuit Board to remove a defective component from the Dolby Board, proceed as follows:

1. Perform "To Service Control Circuit Board", steps (1-5).

NOTE: Extreme care must be used when using a soldering iron not to come in contact with dial cord string.

TO SERVICE METER CIRCUIT BOARD

To simplify servicing, it will first be necessary to remove dial scale mounting bracket. Troubleshoot from conductor side of circuit board whenever possible using "Wiring Diagram Meter Board - Bottom View", proceed as follows:

1. Perform "To Service Control Board", steps (1-4).
2. To remove meter circuit board from dial scale mounting bracket, remove one (1) circuit board mounting screw and unfasten mounting tab at top edge of board.

TO REPLACE COUNTER BELTS

"SMALL COUNTER BELT"

1. Perform "Cabinet Back Removal", step (1-3).
2. Replace small counter belt.

"LARGE COUNTER BELT"

1. Perform "Cabinet Back Removal", steps (1-3), "Cabinet Top Panel Removal", steps (1-2), "Cabinet Front Removal", steps (1-6), and "To Service Tape Mechanism - Parts Above Baseplate", steps (1-3).
2. Remove "small" counter belt.
3. Replace "large" counter belt.

TO REPLACE DRIVE BELT

1. Perform "To Service Tape Mechanism - Parts Below Baseplate", steps (1-3).
2. Remove two (2) flywheel support bracket mounting screws.
3. Remove flywheel support bracket.
4. Replace drive belt, being careful not to get any lubricant on drive belt or any drive surface.
5. Remount flywheel support bracket and check for proper clearance between flywheel and thrust bearing, [see

TO REPLACE DRIVE BELT (Cont'd)

Flywheel Thrust Bearing Adjustment].

SERVICE ADJUSTMENTS

Before aligning or adjustment tape mechanism, wipe off any dirt or lubrication accumulated (with denatured alcohol) around any surface where tape comes in contact, and all rotating drive surfaces.

LUBRICATION

The mechanical parts are factory coated with a thin coat of light grease and should not necessarily require further lubrication. If a light grease is applied, use caution not to get any grease on the record and eraseheads, hubs, pulleys, drive belts, tape reels or selector switch. Use a good grade of lubricant such as G.E. Silicone Lube G322L or Lubriplate (00).

FLYWHEEL THRUST BEARING ADJUSTMENT

1. Perform "To Service Tape Mechanism - Parts Below Baseplate", steps (1-3).
2. Position tape mechanism face down and in stop position.
3. While moving flywheel up and down, slowly turn the thrust adjustment screw clockwise to obtain a clearance of 0 between the flywheel and thrust.

NOTE: DO NOT OVERTIGHTEN THRUST SCREW.

4. Turn thrust adjustment screw counterclockwise approximately 1/8 to 1/4 turn.

PINCHWHEEL PRESSURE

No adjustment determined by pinchroller spring should be sufficient to give adequate and constant pull force eliminating tape "walking and wrinkling" while providing minimum current drain consistent with these objectives.

MECHANICAL TORQUES

Take-up Torque	. . .	35 to 55 gm-cm
Rewind Torque	. . .	55 gm-cm min.
Fast Forward Torque	. . .	55 gm-cm min.

LOCKED SPINDLE TEST

Because of the difficulty of measuring actual torques in gram-centimeters, it is sometimes possible to obtain an indication of proper torque by placing the unit in each mode and grasping the driven spindle with your fingers. Look for current drain increases as follows:

Locked take-up spindle, PLAY or REC	. . . 7 to 18 mA
Locked take-up spindle, FAST FWD	. . . 60 to 120 mA
Locked supply spindle, REWIND	. . . 60 to 120 mA

TAPE HEAD SERVICING

Each time the unit is serviced, the face of both tape heads should be thoroughly cleaned with denatured alcohol or commercial head cleaning solution. The REC/PLAY head should be demagnetized with a commercial demagnetizer. Accumulation of tape oxide during normal operation can cause problems, including loss of Highs and Wow & Flutter.

PLAY/RECORD HEAD AZIMUTH ADJUSTMENT

Adjustment of Play/Record azimuth screw is accessible by first performing "Cabinet Front Removal", steps (4-5). Adjust head azimuth screw as follows:

1. Insert 6 KHz section, side 2 of Hartak Mark XII test tape or an equivalent 6 KHz test tape.
2. Connect a VTVM with a 4Ω dummy load to left or right external speaker jack and play back test tape.
3. The Play/Record head is aligned by tuning the azimuth screw (see Fig. 1) so that the indicator on the VTVM shows the highest output.

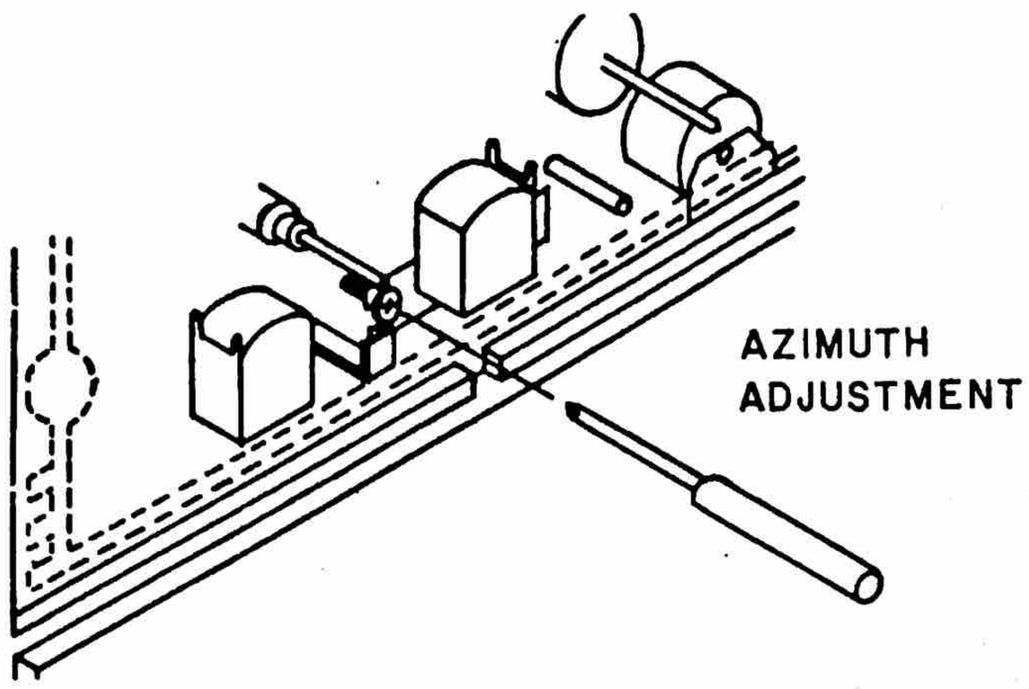


FIG. 1

4. Secure azimuth screw with paint or glue after adjustment.

TAPE SPEED ADJUSTMENT

1. Perform "Cabinet Front Removal", steps (1-6).
2. Connect a frequency counter with a 4Ω dummy load to left or right external speaker jack.
3. Insert and play back 3 KHz section, side 2 of Hartak Mark XII test tape or equivalent 3 KHz test tape.
4. Insert an alignment tool and adjust tape speed potentiometer located thru access hole on bottom side of motor until frequency counter indicates 3 KHz ±3% (see Fig. 2).

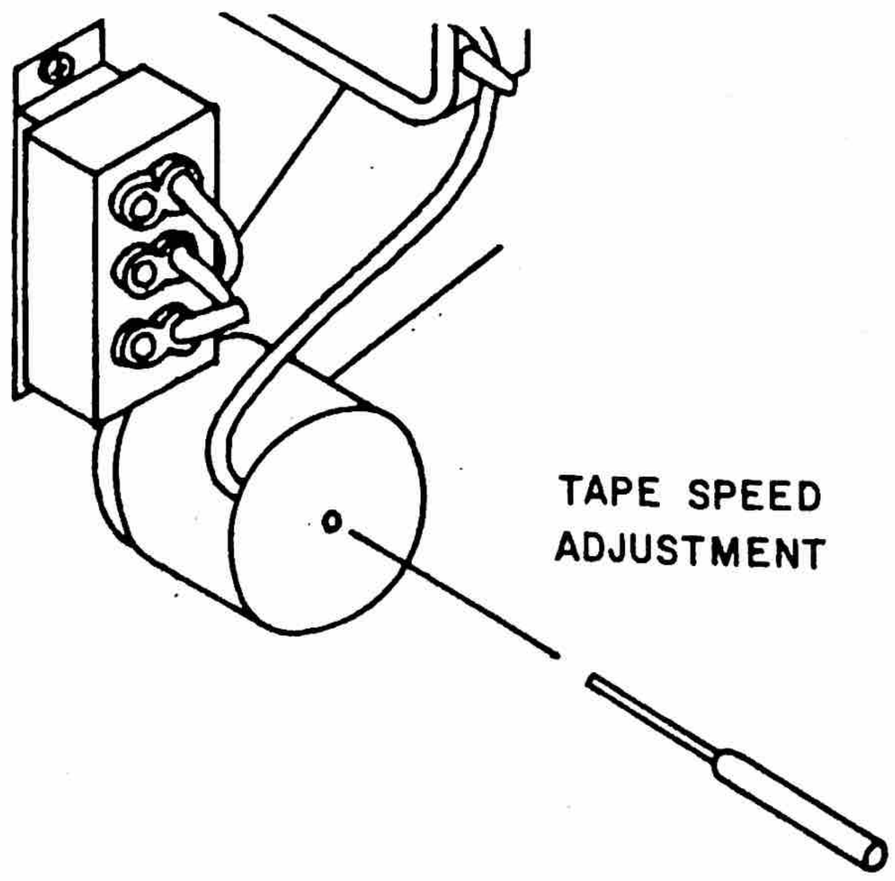


FIG. 2

ERASE HEAD

The erase head is properly aligned when the tape rides directly between the tape guides on the head without crinkling the edges of the tape.

BIAS OSCILLATOR REQUENCY ALIGNMENT

(Refer to "Component Layout Power Amp Board - Top View" for test points and component alignment location).

1. Prior to alignment, place the following controls and switches to positions indicated below:
   - Power switch to "Tape" position.
   - Tape selector switch to "Metal" position.
   - Place unit in "Record" mode.
2. Connect a frequency counter to TP10A, junction of C611 and T701 located on Power Amp Board and ground.
3. Adjust T701 until frequency counter indicates 85 KHz.

BIAS TRAP ALIGNMENT

(Refer to "Component Layout Control Board - Top View" for test point location and "Component Layout Power Amp Board - Top View" for component alignment location).

1. Prior to alignment, place the following controls and switches to positions indicated below:
   - Power switch to "Radio" position.
   - Tape selector switch to "Metal" position.
   - Place unit in "Record" mode.
2. Left channel adjustment, connect VTVM to TP15 and ground. Adjust L501 for minimum indication on VTVM.
3. Right channel adjustment, connect VTVM to TP16 and ground. Adjust L601 for minimum indication on VTVM.

BIAS VOLTAGE ADJUSTMENT

(Refer to "Component Layout Dolby Board - Top View" for test point location and "Component Layout Power Amp Board - Top View" for component alignment location).

1. Prior to Bias voltage adjustment, perform "Bias Oscillator Frequency Alignment" and "Bias Trap Alignment".
2. Place the following switches and controls to positions indicated below:
   - Power switch in "Aux" position.
   - Tape select switch in "CrO2" position.
   - Place unit in "Record" mode.
3. Left channel, connect VTVM to TP10 and ground. Adjust R516 until VTVM indicates 5.4 MV RMS.
4. Right channel, connect VTVM to TP11 and ground. Adjust R616 until VTVM indicates 5.4 MV RMS.
5. VTVM should indicate approximately 9.1 MV RMS with tape select switch in "Metal" position and 3.1 MV RMS in "Standard" position to confirm that an optimum frequency response is obtained.

RECORDING CURRENT ALIGNMENT

This adjustment is Factory Set and should not require being re-adjusted. If alignment is required, refer to "Component Layout Dolby Board - Top View" and "Component Layout Control Board-Top View" for test points and component alignment location.

RECORDING CURRENT ALIGNMENT (Cont'd)

1. Prior to alignment, place the following controls and switches to positions indicated below:
   - Power switch to "Aux" position.
   - Tape selector to "Standard" position.
   - ALC switch to "Off" position.
   - Dolby switch to "Off" position.
   - Tape mechanism in "Record" mode.
2. Connect audio generator with 400 Hz at 400 MV to left and right Aux input jacks.
3. Connect VTVM to TP7 and adjust left channel record level control (R137) for 580 MV.
4. Reconnect VTVM TP8 and adjust right channel record level control (R237) for 580 MV.
5. Reduce input signal level to 183 MV (10db down) on both channels.
6. Connect VTVM to TP13 and adjust R156 for 92 MV (Left Channel).
7. Reconnect VTVM to TP14 and adjust R256 for 92 MV (Right Channel).

PLAYBACK LEVEL ALIGNMENT - "FACTORY SET"

(Refer to "Component Layout Dolby Board - Top View" and "Component Layout Control Board - Top View" for test points and component alignment locations).

1. Place the following switches and controls in positions indicated below:
   - Function switch in "Tape" position.
   - Tape selector switch in "Standard" position.
2. Playback test tape MTT-150.
3. Connect VTVM to TP7 and adjust R123 for 580 MV on left channel.

PLAYBACK LEVEL ALIGNMENT - "FACTORY SET" (Cont'd)

4. Reconnect VTVM to TP8 and adjust R223 for 580 MV on right channel.

DOLBY BIAS TRAP - "FACTORY SET"

Alignment of Bias trap coils L104 and L204 for 85 KHz are adjusted for minimum leakage reading on VTVM with the following controls and switches to positions indicated below:

- Power switch to "Aux" position.
- Tape selector to "Metal" position.
- Tape mechanism in "Record" mode at no signal condition.

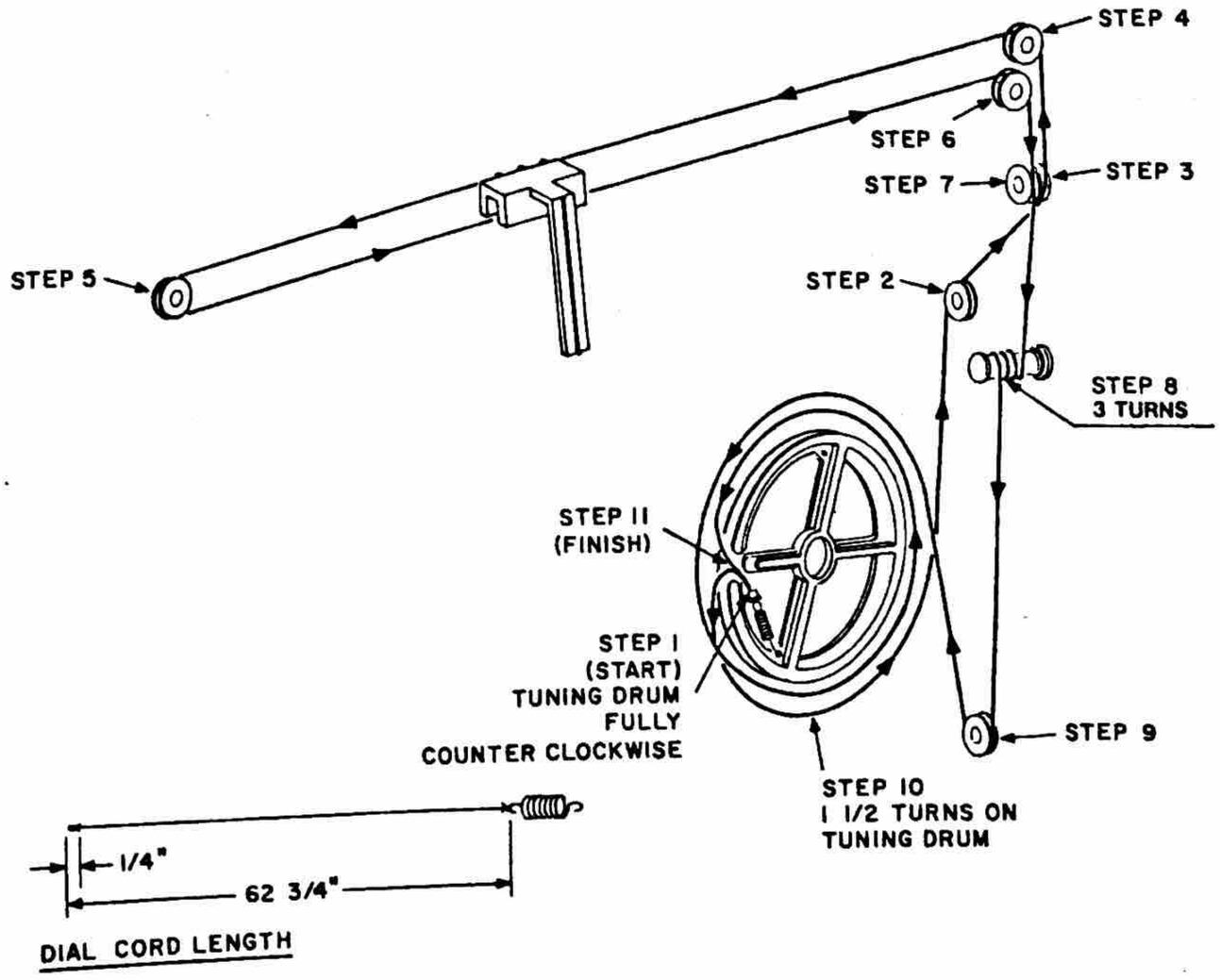
METER LED ALIGNMENT

(Refer to "Component Layout Dolby Board - Top View" for test point location and "Component Layout Meter Board - Top View" for component alignment location).

1. Remove two (2) dial scale mounting screws and dial scale.
2. Place the following switches in positions indicated below:
   - Function switch in "Aux" position.
   - Meter switch in "Level" position.
3. Connect an audio signal generator to left and right Aux input jack with a 400 Hz signal.
4. Connect VTVM to TP 7 and ground. Adjust generator input level until VTVM indicates 580 MV.
5. Repeat step 4, with VTVM connected to TP 8.
6. Adjust R301 (Left Ch.) and R401 (Right Ch.) until 0db or both LED segments begins to light up on left and right meter indicator.

DIAL CORD STRINGING INSTRUCTIONS

1. Perform "Cabinet Front Removal", steps (1-6).
2. Dial cord length 62 3/4" long.
3. Set tuning drum fully counterclockwise at 9:00 o'clock position.
4. Steps (1-11) indicate proper order and direction of dial cord installation.
5. Remounting and calibrate dial pointer. Secure dial pointer to dial string after calibrating.



DIAL CORD STRINGING

ALIGNMENT PROCEDURE - MODEL 3-5286A

AM ALIGNMENT - FUNCTION SWITCH IN RADIO POSITION AND BAND SELECT SWITCH IN AM POSITION

AM Generator RF signal modulated at 30% at 400Hz. Radiated signal, minimum required.

	GEN. FREQ.	SET DIAL	INDICATOR	ADJUSTMENT	REMARKS
1.	455 KHz	Low End	AC VTVM Across Left or Right Ext. Speaker Jack	T2, T3 (AM IF)	Max. output, repeat
2.	505 KHz	Low End		L6 (AM Osc.)	Max. output
3.	1650 KHz	High End		C58 (Osc. Trim)	Max. output, repeat 2 & 3.
4.	1400 KHz	Tune to Signal		C40 (Ant. Trim)	Max. output
*5.	600 KHz	Tune to Signal		L5 (AM Antenna)	Slide tank coil along core to obtain max. output. Wax or cement tank coil to core.

*Only perform Step 5, if L5 tank coil is loose on core.

FM ALIGNMENT - FUNCTION SWITCH IN RADIO POSITION AND BAND SELECT SWITCH IN FM POSITION

FM Sweep Generator, 1 MHz sweep at line sync, thru 1 K in series with a 5pf capacitor to TP1

	GEN FREQ.	SET DIAL	INDICATOR	ADJUSTMENT	REMARKS
1.	10.7 MHz	High End	Scope at TP5	T1 (FM IF)	Max. output, symmetry centered on 10.7 marker; then repeat.
2.	10.7 MHz	High End		L4 (Ratio Det.)	Symmetrical S-Curve, centered on 10.7 marker. Repeat 1 & 2.

FM Generator with 400Hz modulation (30% or 22.5 KHz deviation) loosely coupled to TP1

3.	87.3 MHz	Low End	AC VTVM Across Left or Right Ext. Speaker Jack	L7 (FM Osc.)	Max. output
4.	109 MHz	High End		C37 (Osc. Trim)	Max. output, repeat 3 & 4.
5.	88 MHz	Tune to Signal		*L2 (FM RF)	Max. output
6.	108 MHz	Tune to Signal		C7 (FM RF Trim)	Max. output. Repeat steps 5 & 6.

*Slightly spread or compress coil winding to obtain optimum alignment

FM MPX ALIGNMENT - FUNCTION SWITCH IN RADIO POSITION AND BAND SELECT SWITCH IN FM STEREO POSITION.

19 KHz Alignment - Stereo FM Generator with 19 KHz Pilot to TP1

	GEN. FREQ.	SET DIAL	INDICATOR	ADJUSTMENT	REMARKS
1.	98 MHz w/19 KHz pilot or Tune to a strong FM stero broadcasting a 19 KHz pilot.	Tune to Signal	Frequency counter at TP6	R40	Adjust until frequency counter indicates 19 KHz.

CHANNEL SEPARATION ALIGNMENT - STEREO GENERATOR WITH 19 KHz PILOT TO TP1.

2.	98 MHz	Tune to Signal	AC VTVM to Left or Right Ext. Speaker Jacks	R45	Adjust for min. output from L. Ch. When R. Ch. is modulated or vise-versa, channel separation should not be less than 25db.

ALIGNMENT PROCEDURE - MODEL 3-5286A (Cont'd)

	19/38 KHz Filter Alignment - Stereo Generator With 19 KHz Pilot to TP1.				
	GEN. FREQ.	SET DIAL	INDICATOR	ADJUSTMENT	REMARKS
3.	98 MKK w/19 KHz pilot	Tune to Signal	AC VTVM to TP 7 (on Dolby Board)	L10	Adjust for Min. output on L. Ch.
			AC VTVM to TP8 (on Dolby Board)	L11	Adjust for Min. output on R. Ch.
4.	19 KHz pilot "only"		AC VTVM to TP7	L8	Adjust for Min. output on L. Ch.
			AC VTVM to TP8	L9	Adjust for Min. output on R. Ch.

IMPORTANT

PERFORM THE FOLLOWING SAFETY CHECKS AFTER SERVICING THIS UNIT:

1. Remove all externally connected test equipment and wires before safety testing this unit.

2. Use RT 6440 Safety Test Box or construct circuit as shown.

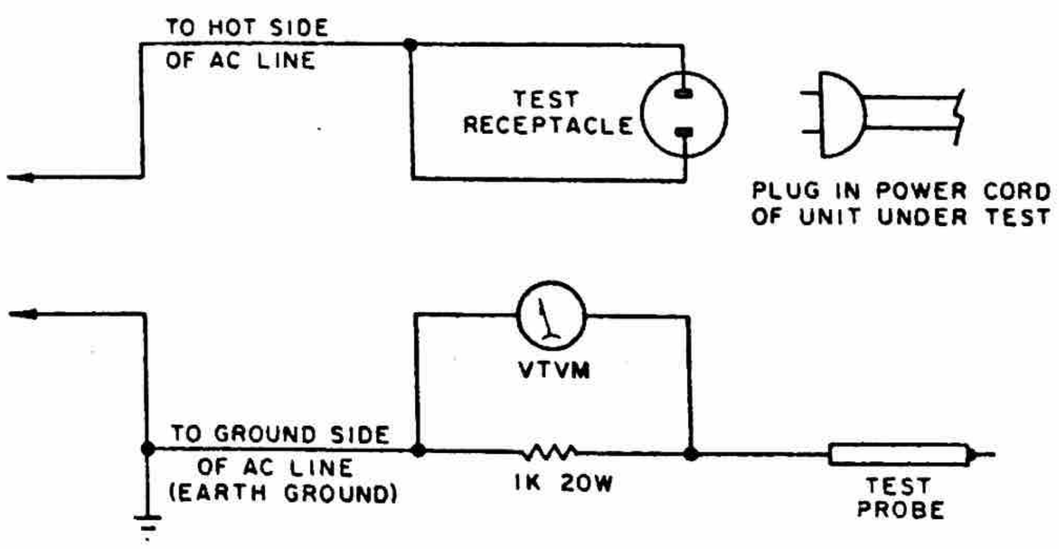
3. Plug power cord of unit to be tested into Test Receptacle.

4. Switch unit being tested to ON or PLAY position, and Voltage Selector Switch to 120V position.

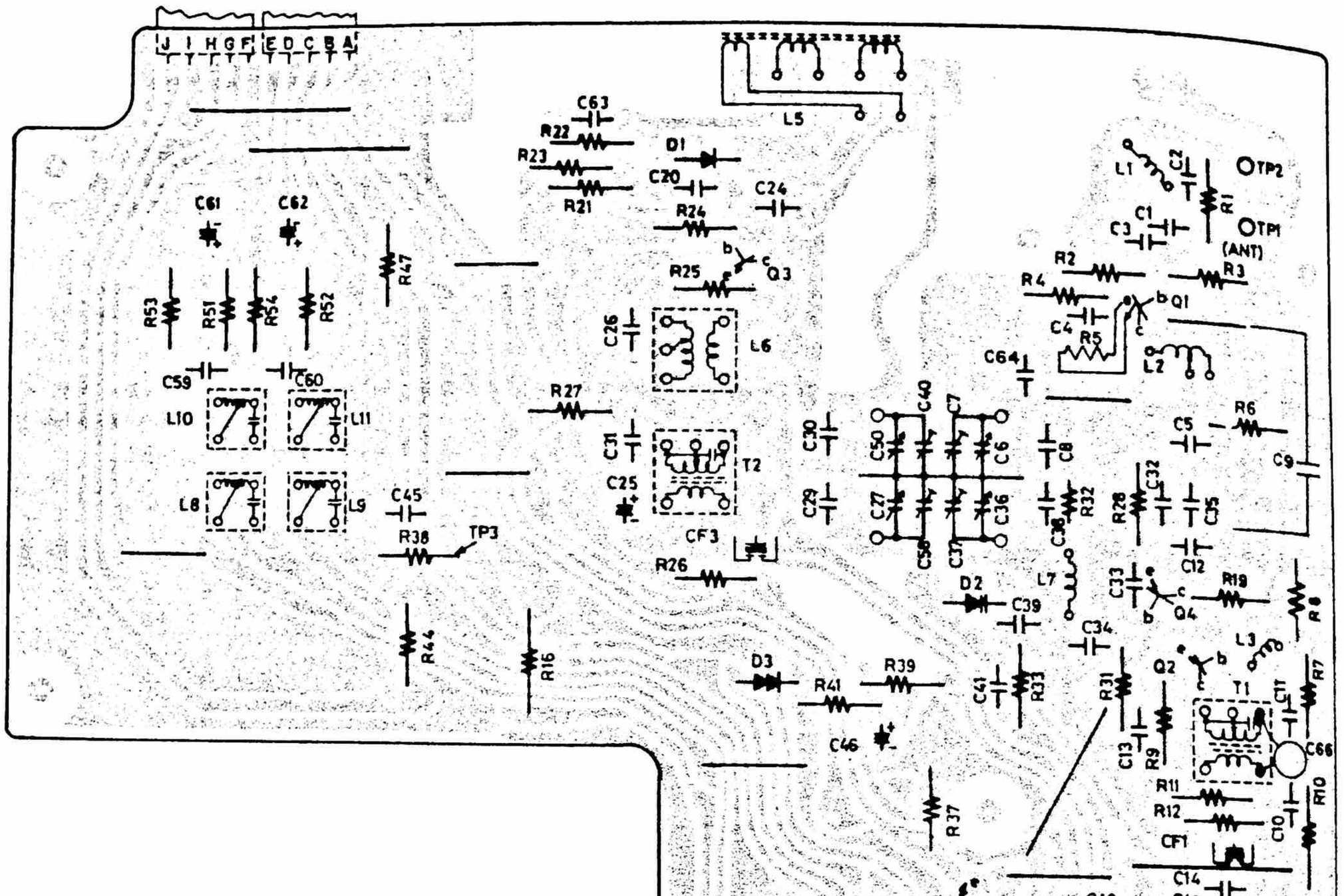
5. Connect VTVM across 1K resistor in test circuit. Set meter on high (150V AC) scale to avoid meter damage and touch the following points with Test Probe.

   a) Barrel of Left Microphone Jack
   b) Positive Battery Terminal Near Voltage Selector Switch
   c) Left Woofer Speaker Grille

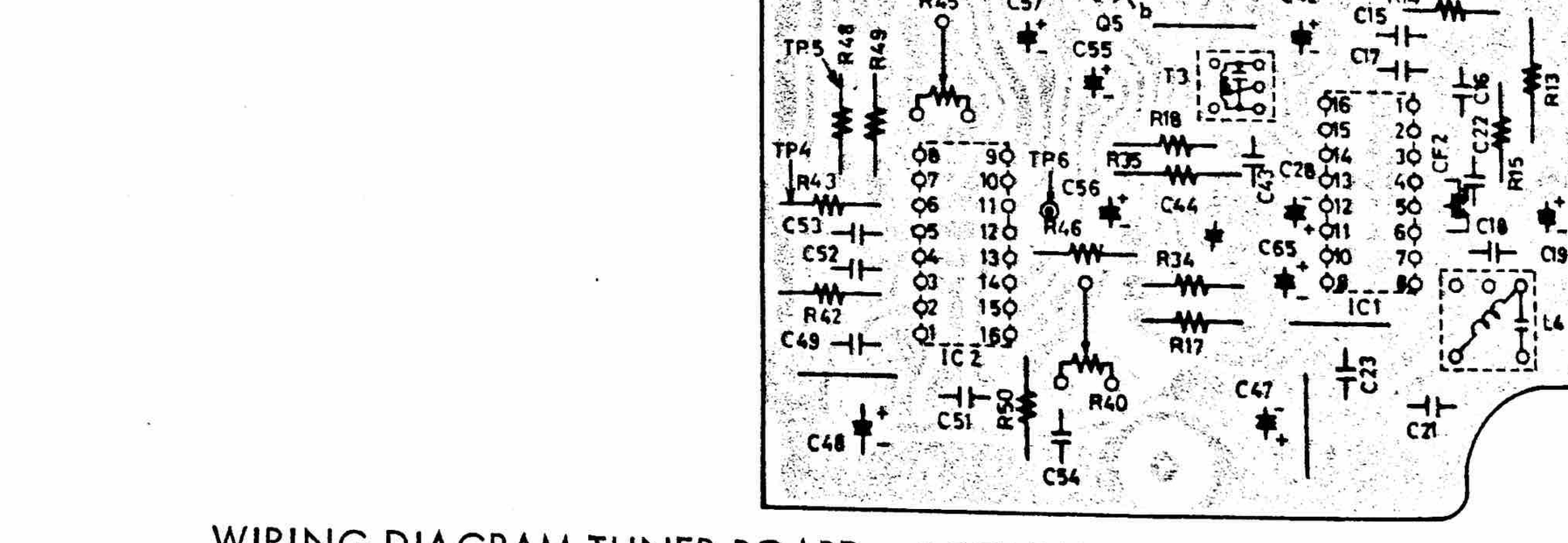
   If meter reading indicates less than 3 volts on all test points, set meter to low (3V AC) scale and repeat test.



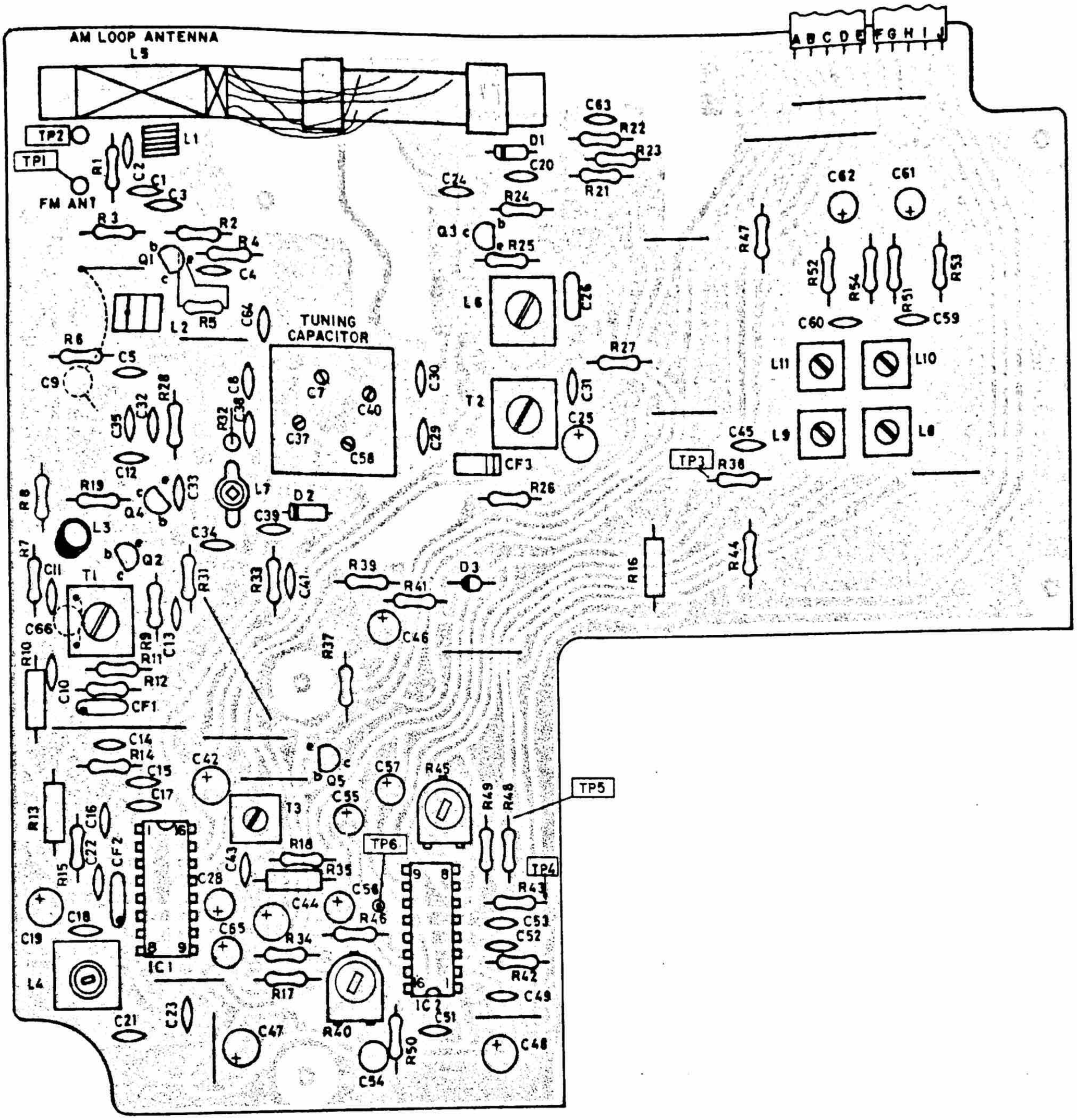
6. Any reading greater than two tenths (.2) volt indicates a potential shock hazard. If this occurs, determine the cause of the leakage, correct the problem, and repeat safety test.



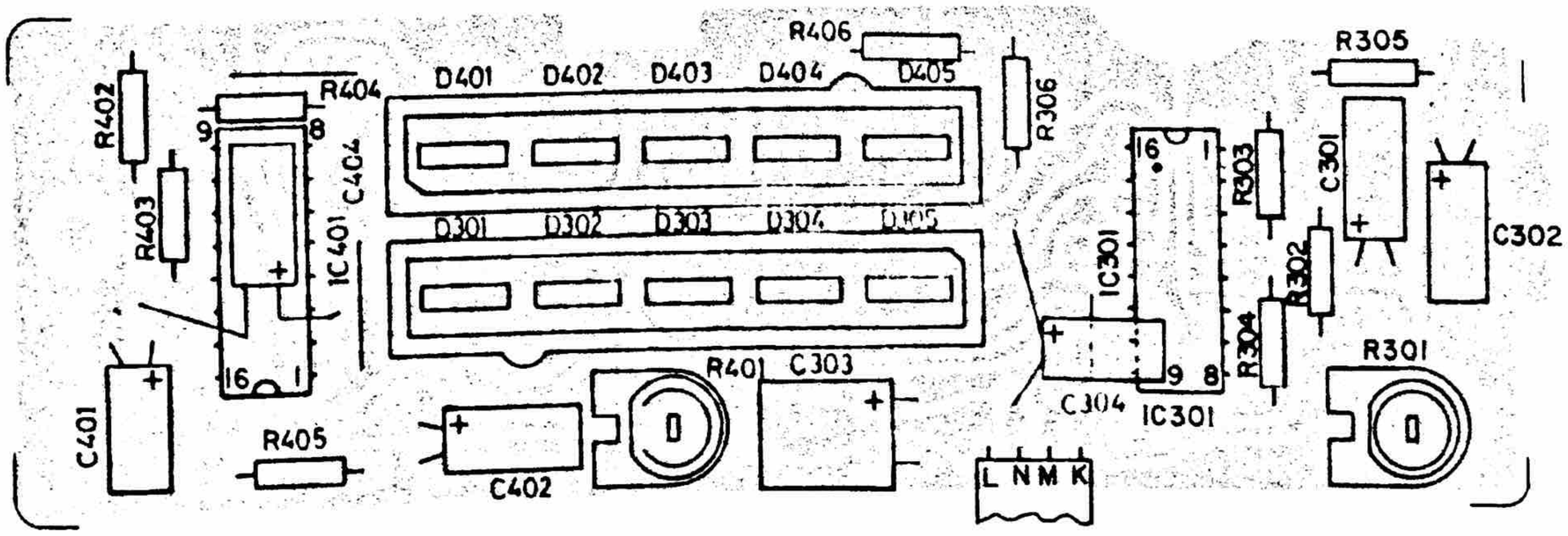
WIRING DIAGRAM TUNER BOARD - BOTTOM VIEW 3-5286A



WIRING DIAGRAM METER BOARD - BOTTOM VIEW 3-5286A

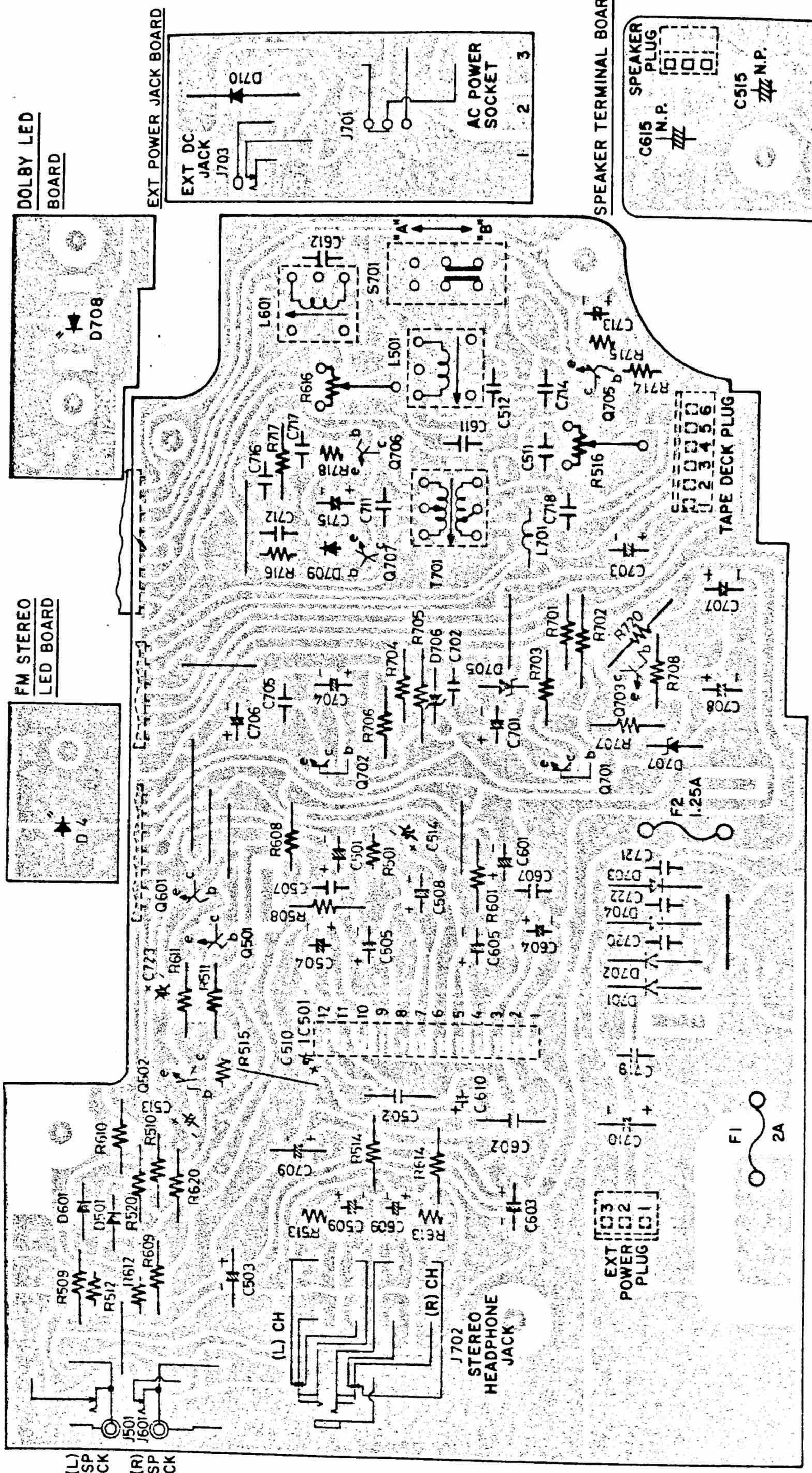


COMPONENT LAYOUT TUNER BOARD - TOP VIEW 3-5286A

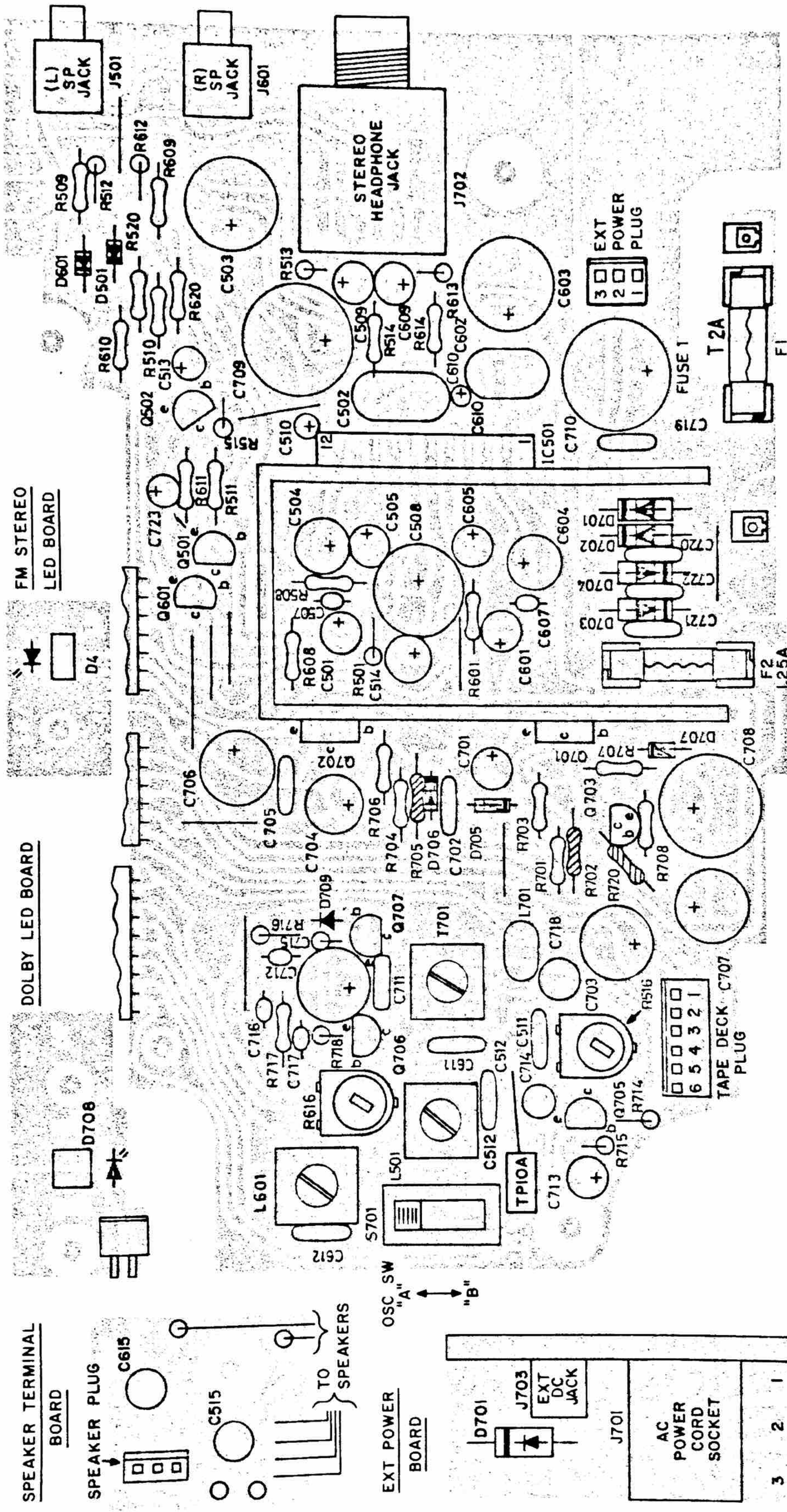


COMPONENT LAYOUT METER BOARD - TOP VIEW 3-5286A

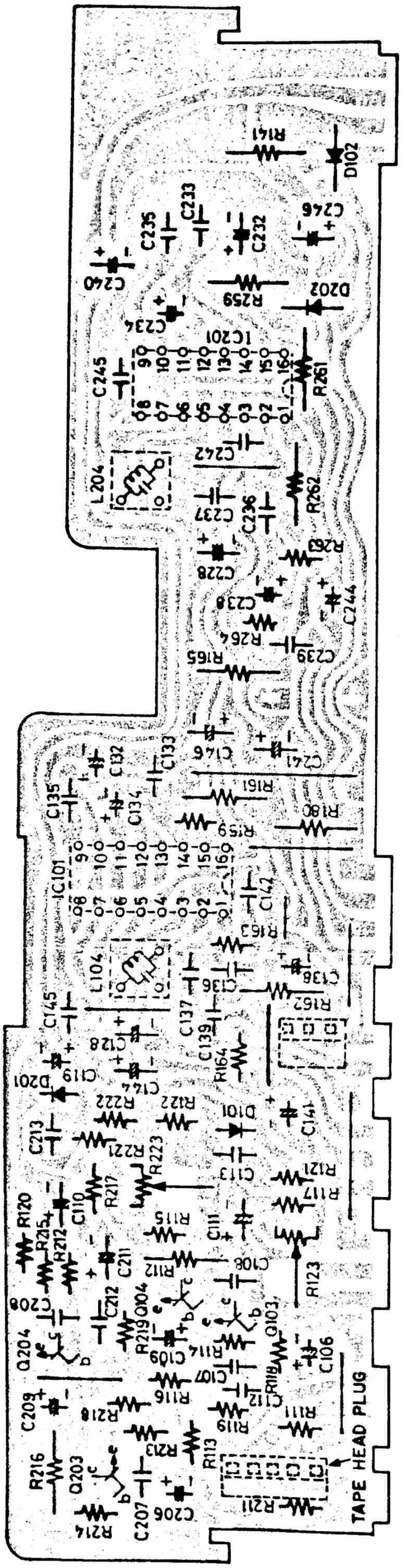
GENERAL ELECTRIC



WIRING DIAGRAM POWER AMP BOARD - BOTTOM VIEW 3-5286A

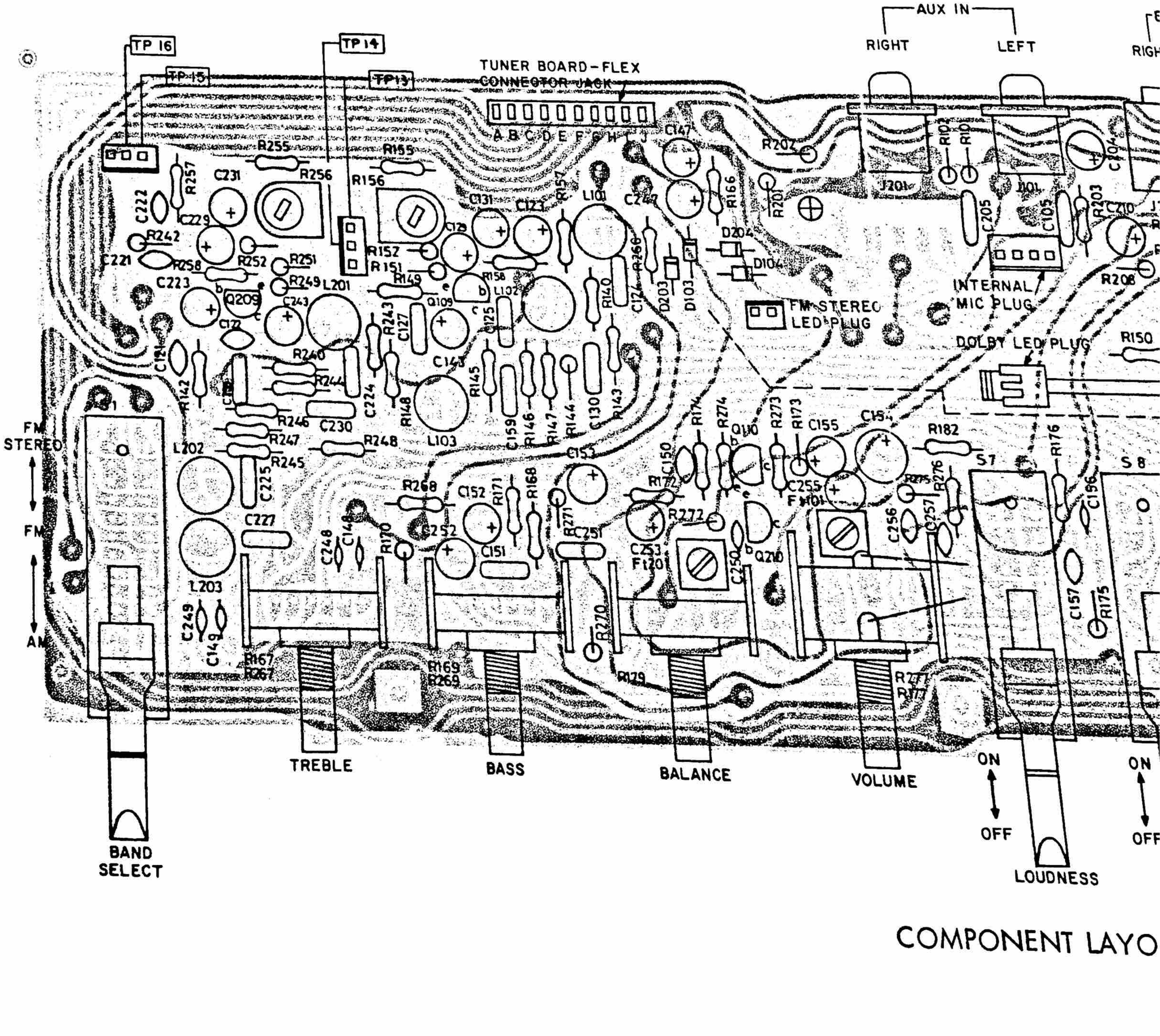


COMPONENT LAYOUT POWER AMP BOARD - TOP VIEW 3-5286A

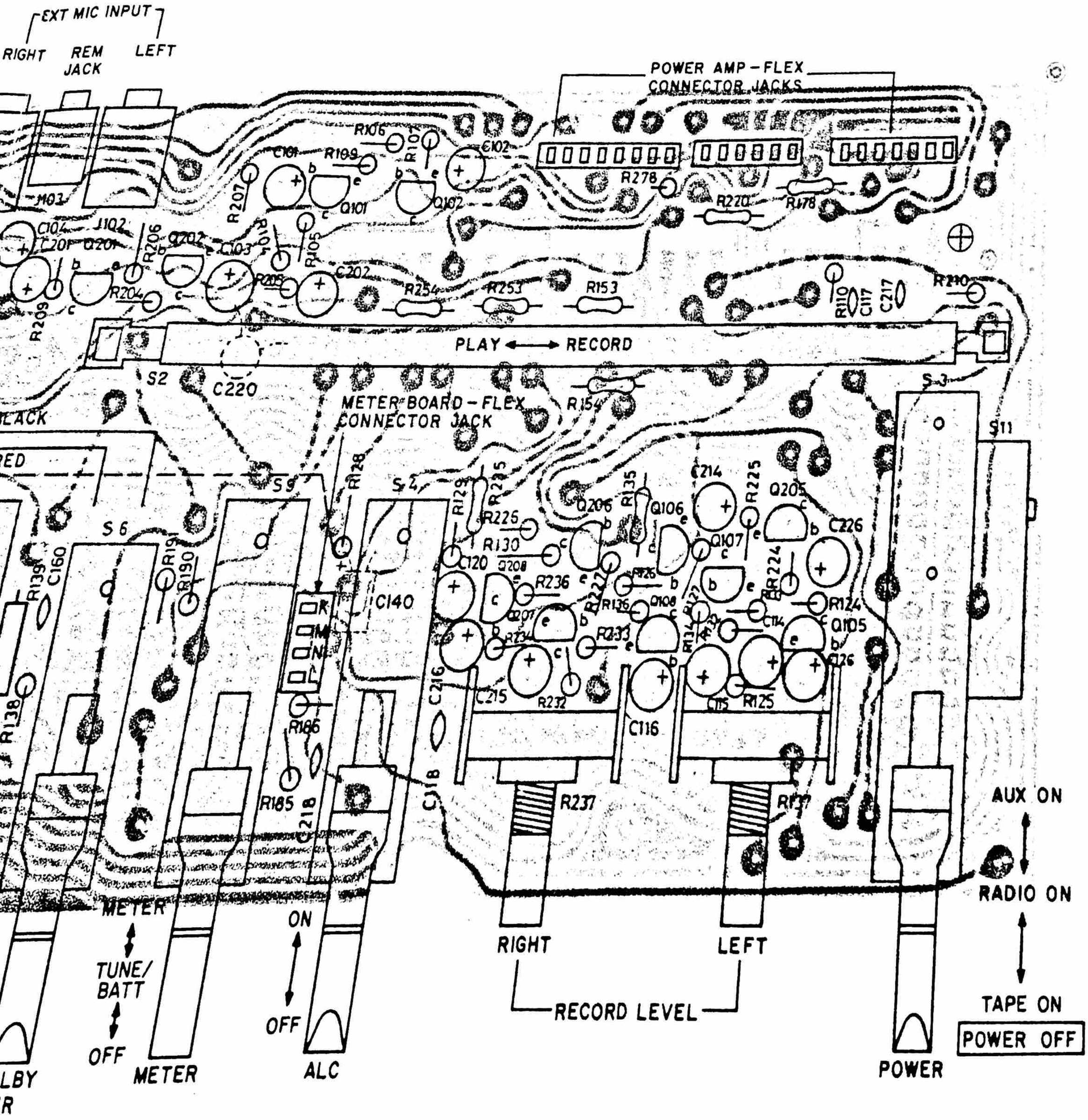


WIRING DIAGRAM DOLBY BOARD - BOTTOM VIEW 3-5286A

COMPONENT LAYOUT DOLBY BOARD - TOP VIEW 3-5286A

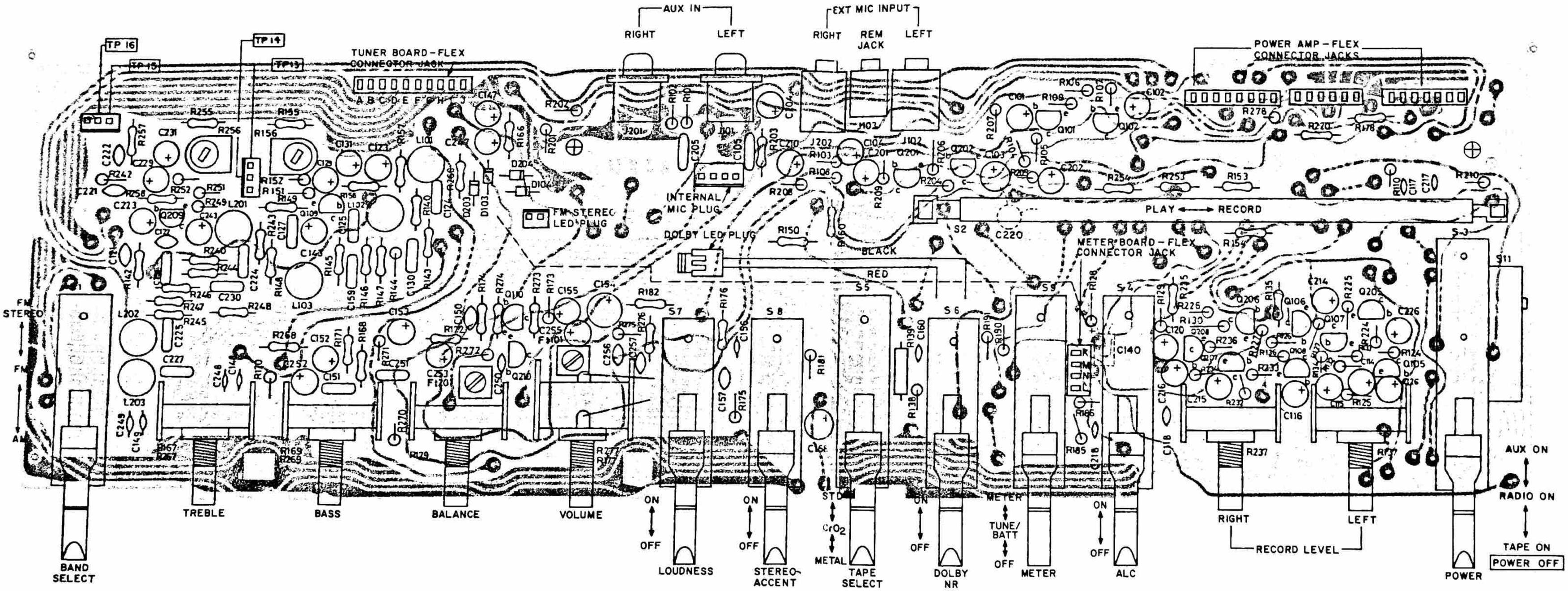


COMPONENT LAYO



TOP VIEW 3-5286A

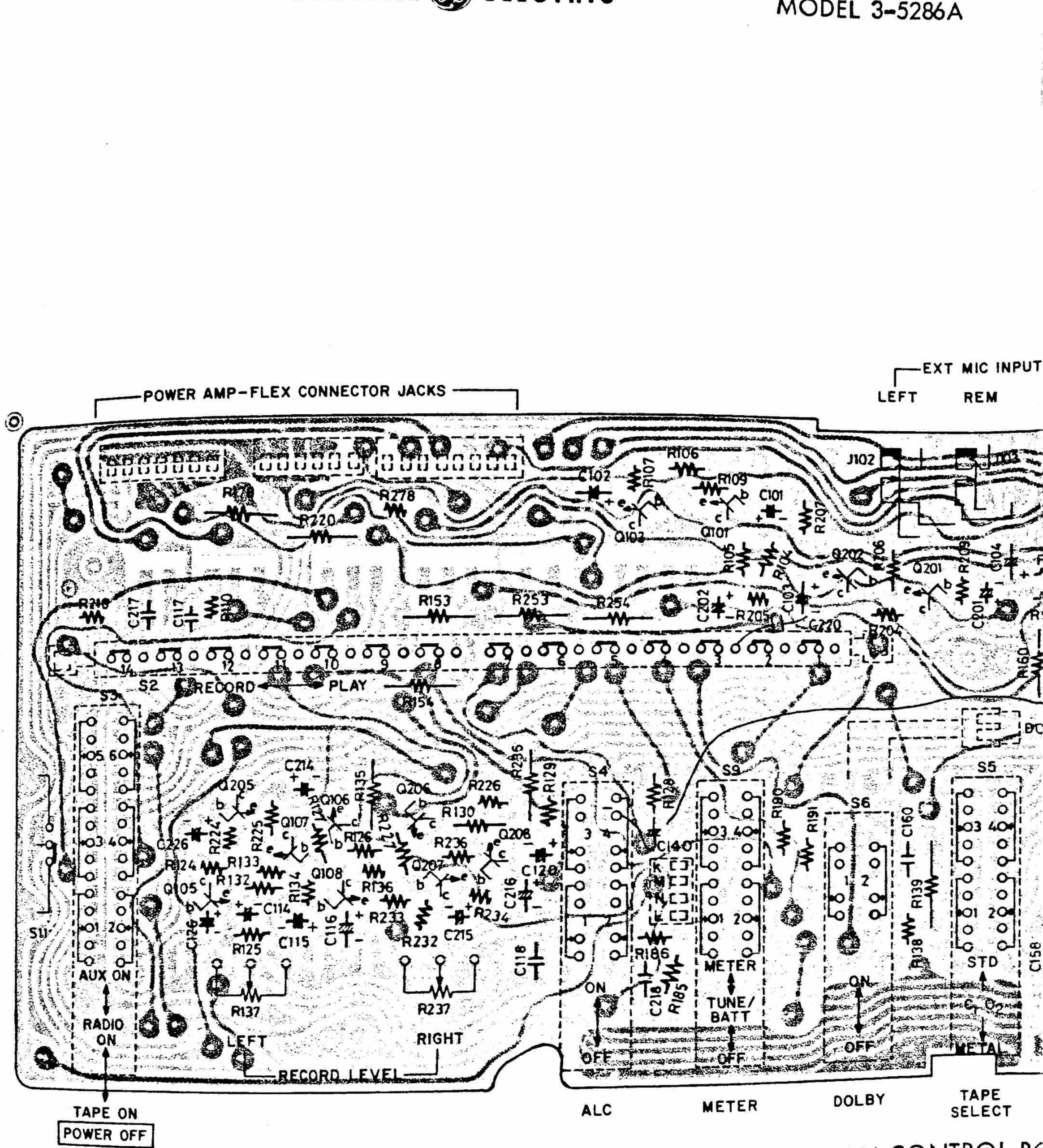
GENERAL ELECTRIC MODEL 3-5286A



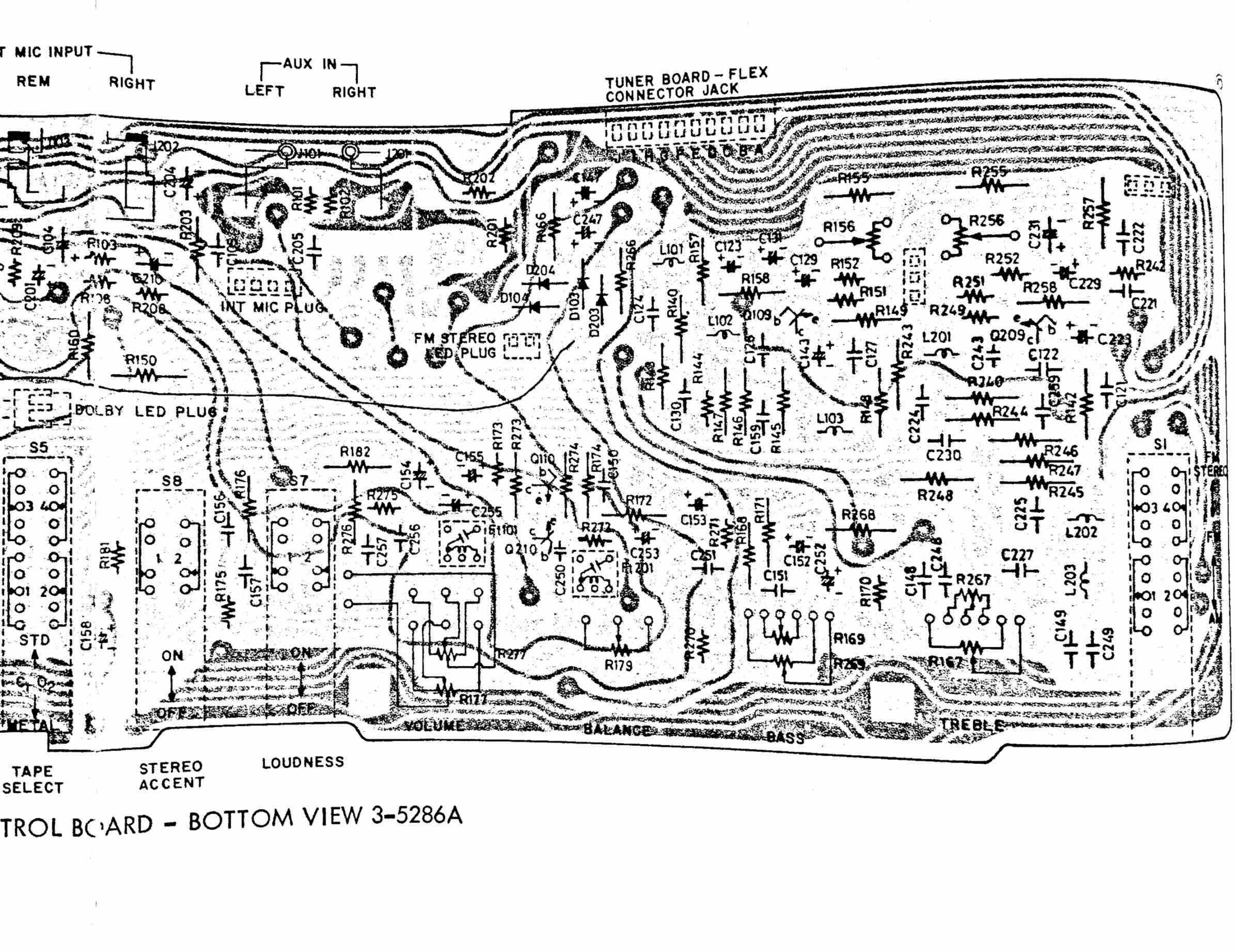
COMPONENT LAYOUT CONTROL BOARD - TOP VIEW 3-5286A

GENERAL ELECTRIC

MODEL 3-5286A

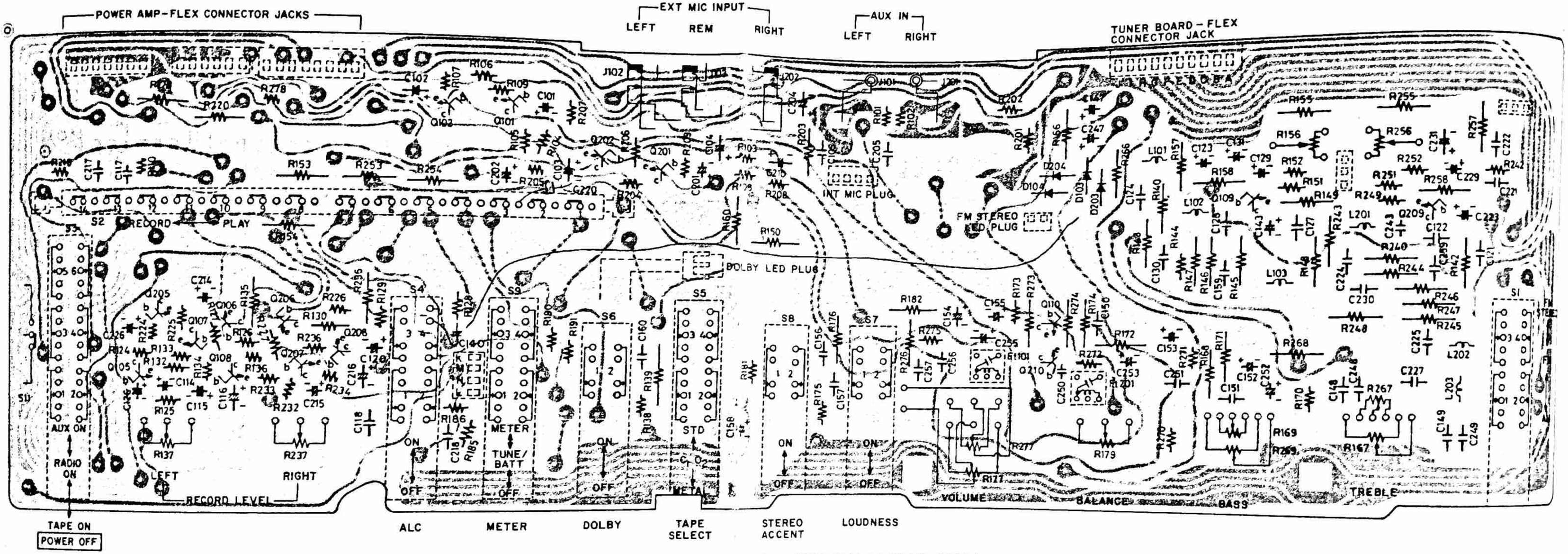


WIRING DIAGRAM CONTROL BO



TROL BOARD – BOTTOM VIEW 3-5286A

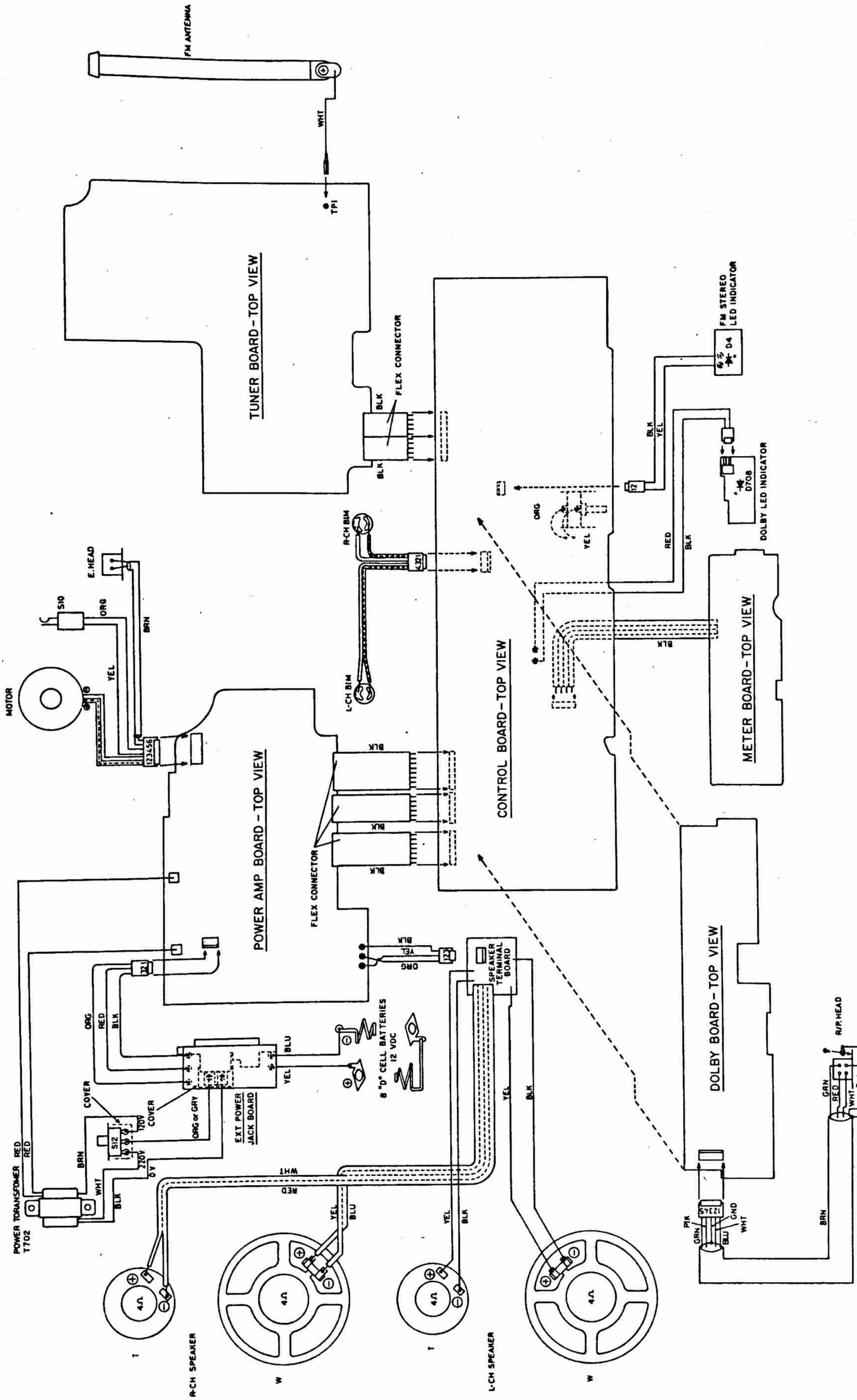
MODEL 3-5286A GENERAL ELECTRIC



WIRING DIAGRAM CONTROL BOARD - BOTTOM VIEW 3-5286A

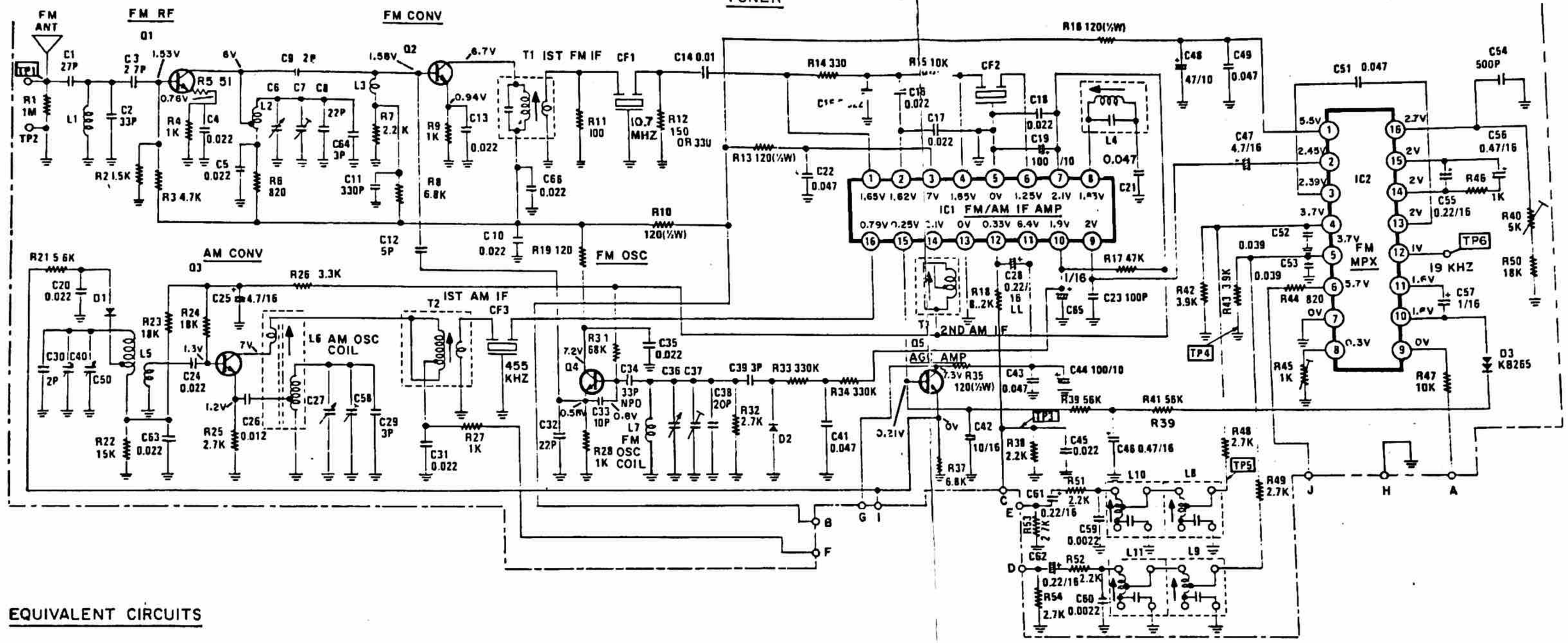
BLOCK DIAGRAM 3-5286A

INTERCONNECTION WIRING DIAGRAM - TOP VIEW 3-5286A



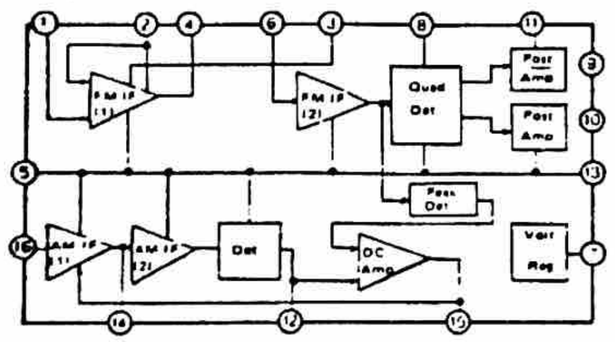
MODEL 3-5286A GENERAL ELECTRIC

TUNER

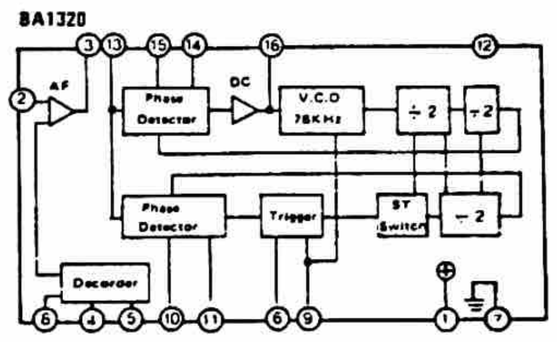


EQUIVALENT CIRCUITS

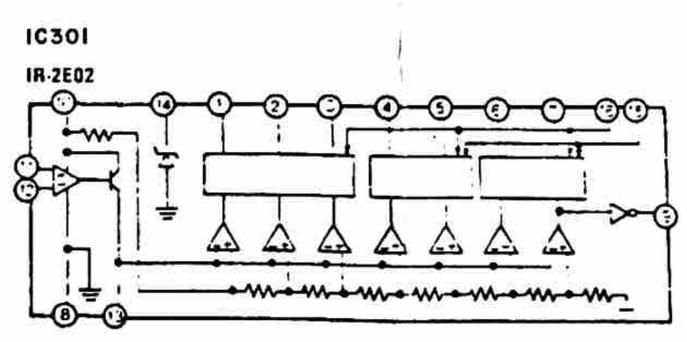
IC1
HA12413



IC2
BA1320



IC301
IR-2E02



SCHEMATIC DIAGRAM – TUNER & METER 3-5286A

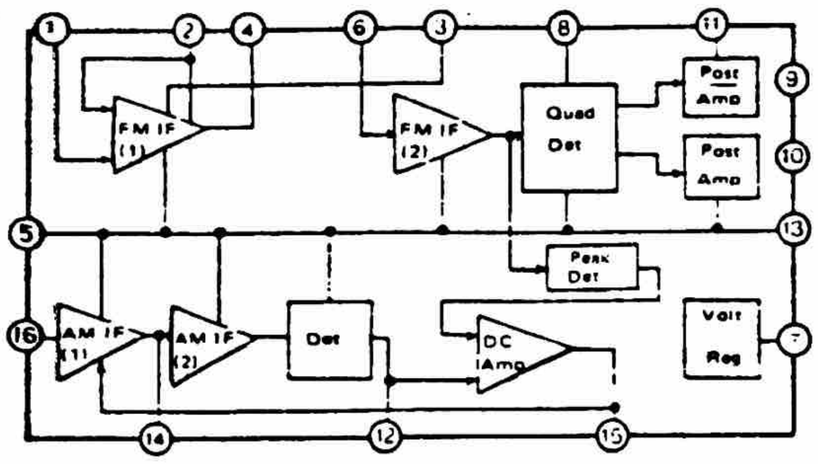
TUNER

FM ANT
FM RF
Q1
FM CONV
Q2
T1 IST FM IF
CF1
CF2
C14 0.01
R14 330
R15 10K
C16 0.022
C17 0.022
TP1
TP2
R1 1M
C1 27P
L1
C2 33P
C3 2.7P
1.53V
0.76V
R5 51
6V
C9 2P
1.58V
6.7V
0.94V
C6 C7 C8
L2
22P
L3
R7 2.2K
C64 3P
R9 1K
C13 0.022
R11 100
10.7 MHZ
R12 150 OR 330
R13 120(½W)
C22 0.047
R4 1K
C4 0.022
C5 0.022
R2 1.5K
R3 4.7K
R6 820
C11 330P
R8 6.8K
C66 0.022
C12 5P
C10 0.022
R19 120
R10 120(½W)
FM OSC
1.65V 1.62V 7V 1.85V 0V
IC1 FM/AM I
0.79V 0.25V 0V 0.33V
AM CONV
Q3
R26 3.3K
R21 5.6K
C20 0.022
D1
C25 4.7/16
T2 IST AM IF
CF3
455 KHZ
R23 18K
R24 18K
L5
L6 AM OSC COIL
7V
1.3V
C24 0.022
C30 C40
2P
C50
1.2V
C26 0.012
C27
C58
C29 3P
R22 15K
C63 0.022
R25 2.7K
R27 1K
C31 0.022
R31 68K
7.2V
Q4
C35 0.022
C34 33P NPO
C36 C37
C39 3P
R33 330K
R34 330K
0.58V
C33 10P
0.8V
L7 FM
R28 OSC 1K COIL
C32 22P
C38 20P
R32 2.7K
D2
C41 0.047
0.21V
0V
C42 10/16
R37 6.8K
R18 8.2K
T3
2ND AM IF
Q5
AGC AMP
7.3V
R35 120(½W)
B
G
I
F
C
E

EQUIVALENT CIRCUITS

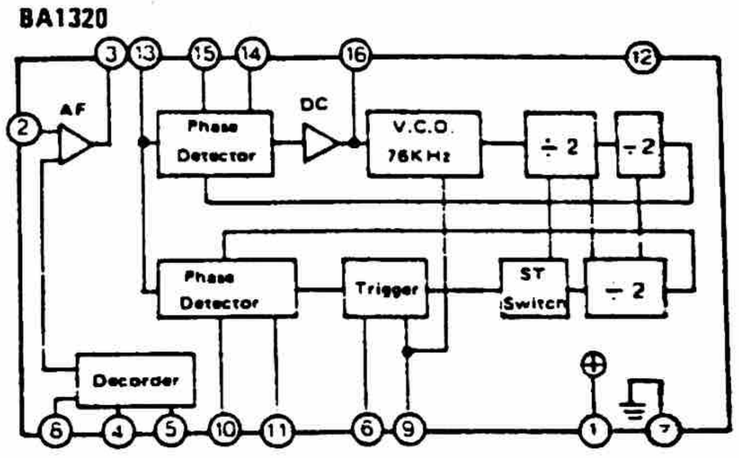
IC1

NA12413



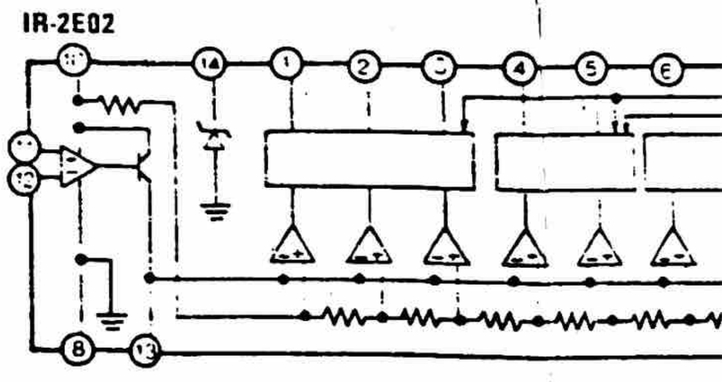
IC2

BA1320

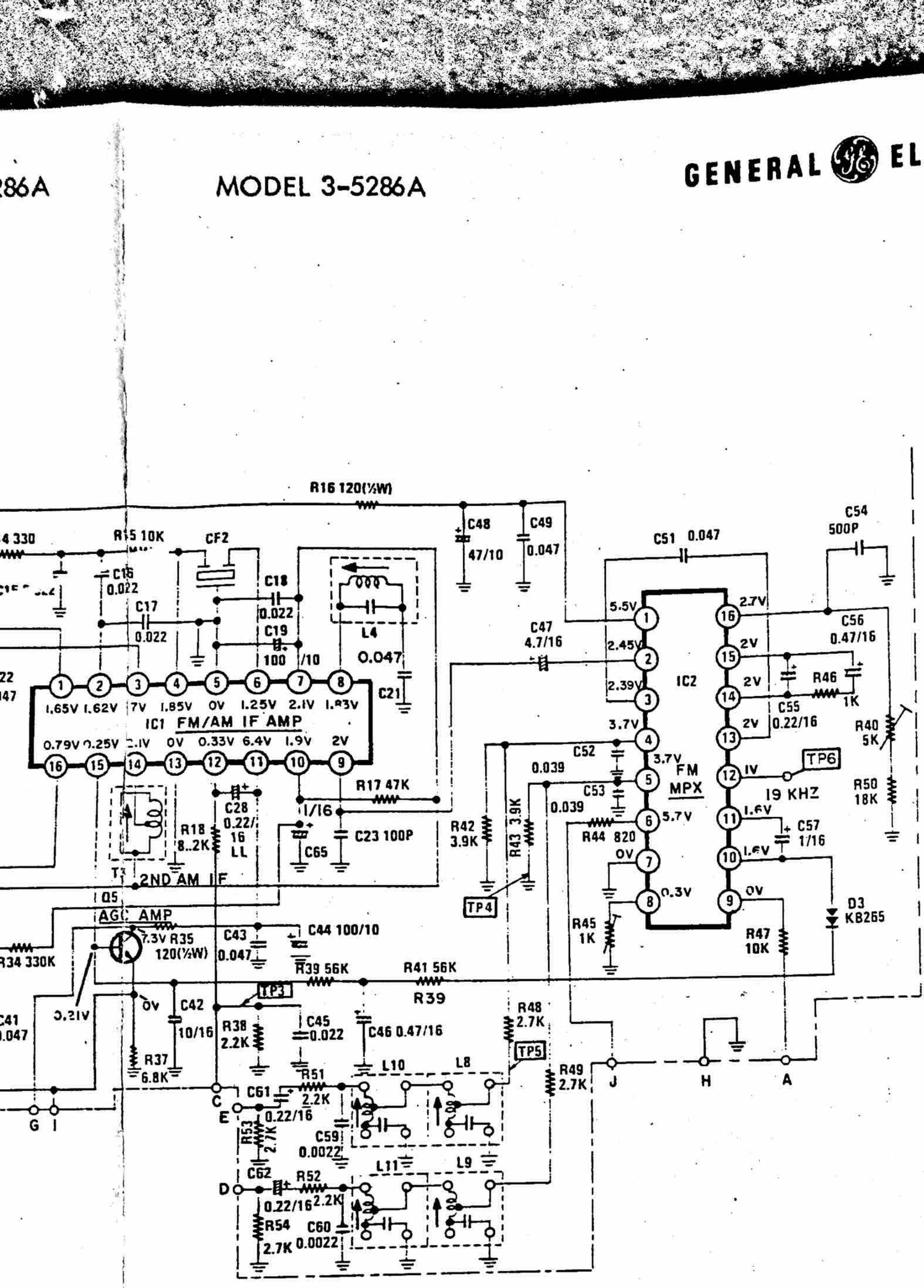


IC301

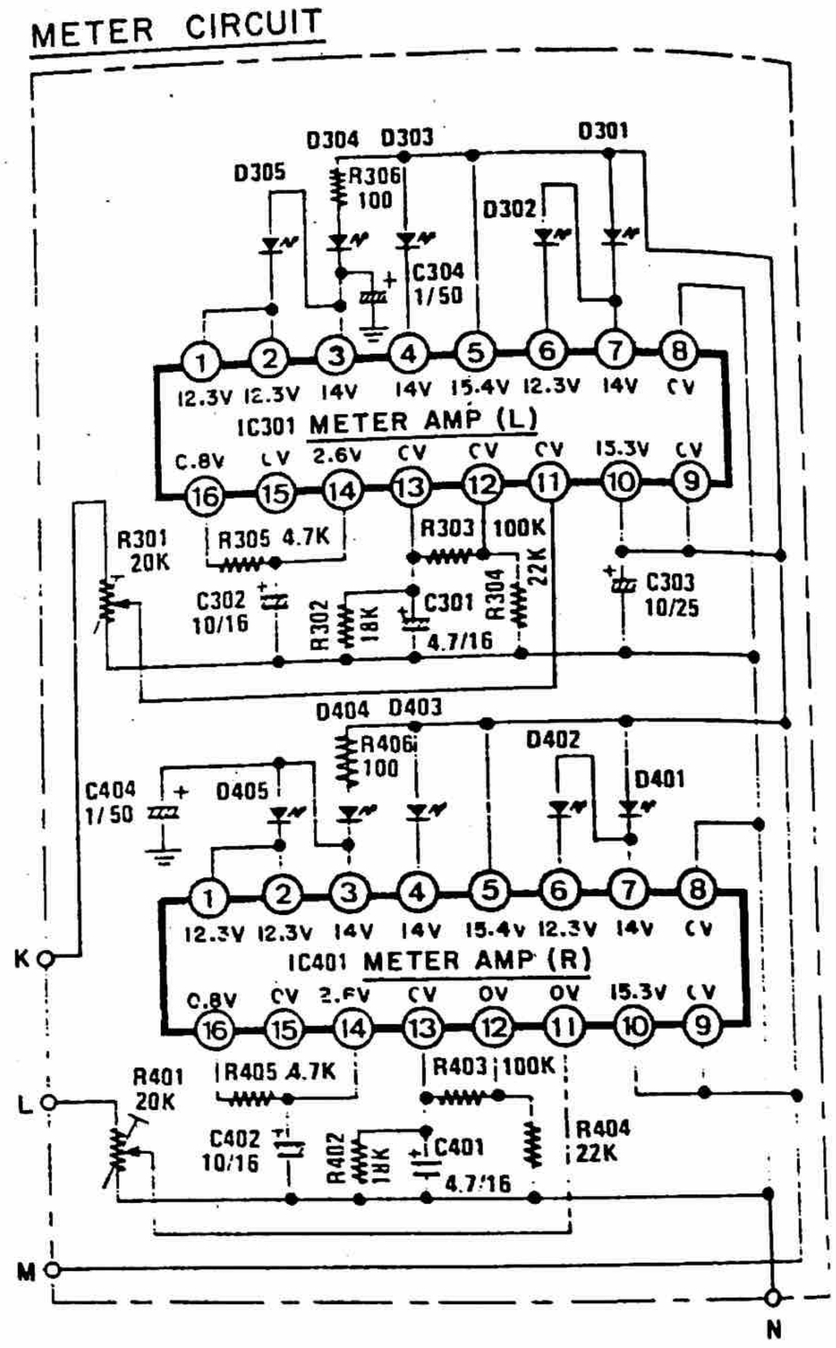
IR-2E02



SCHEMATIC DIAGRAM – TUNER



METER CIRCUIT



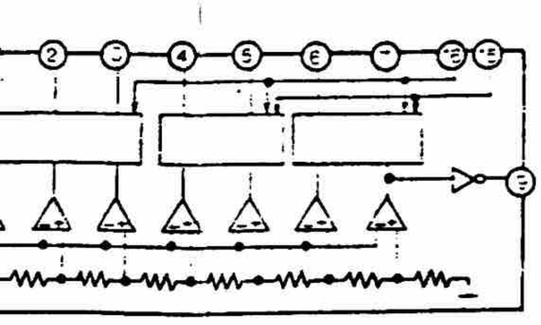
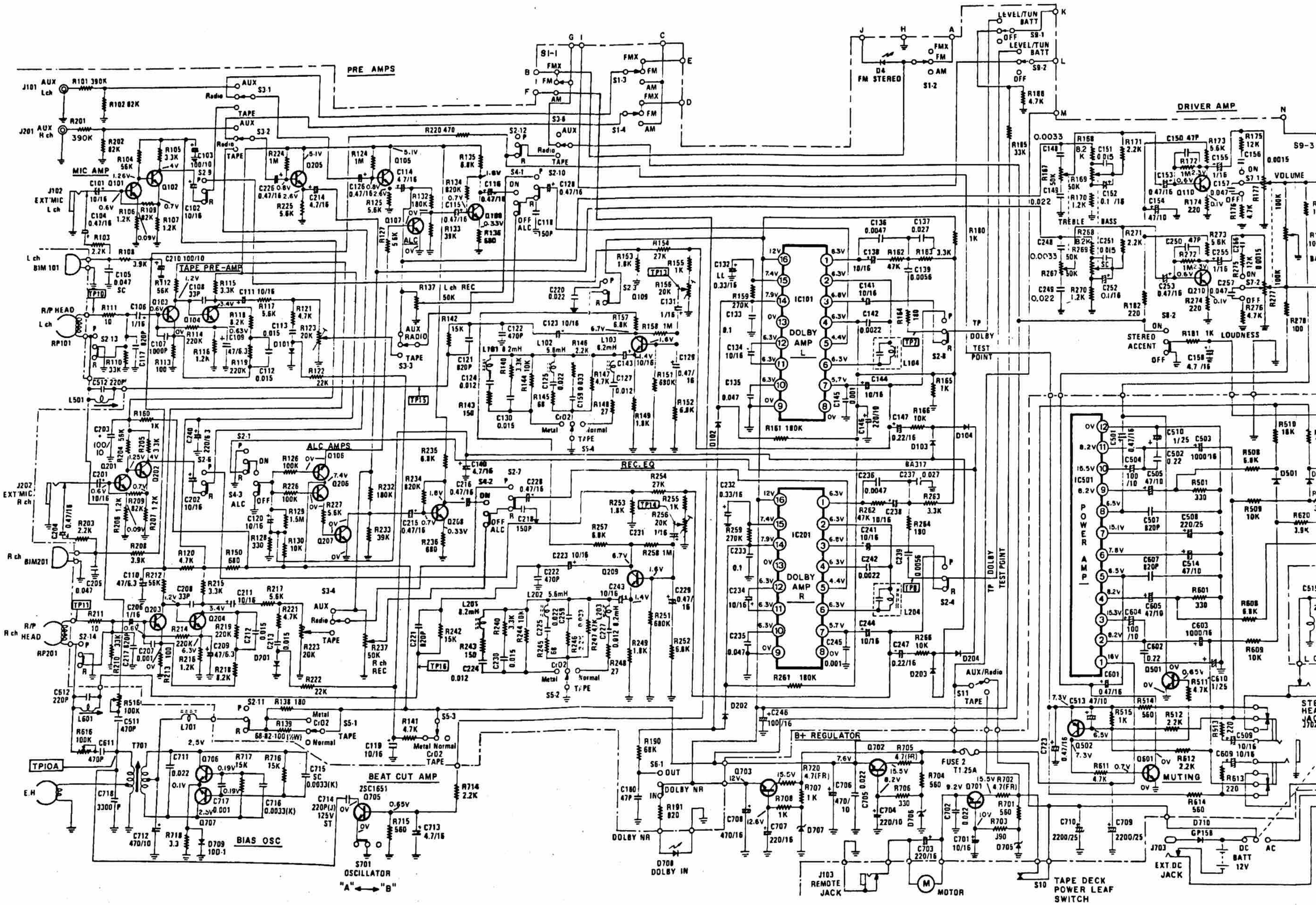
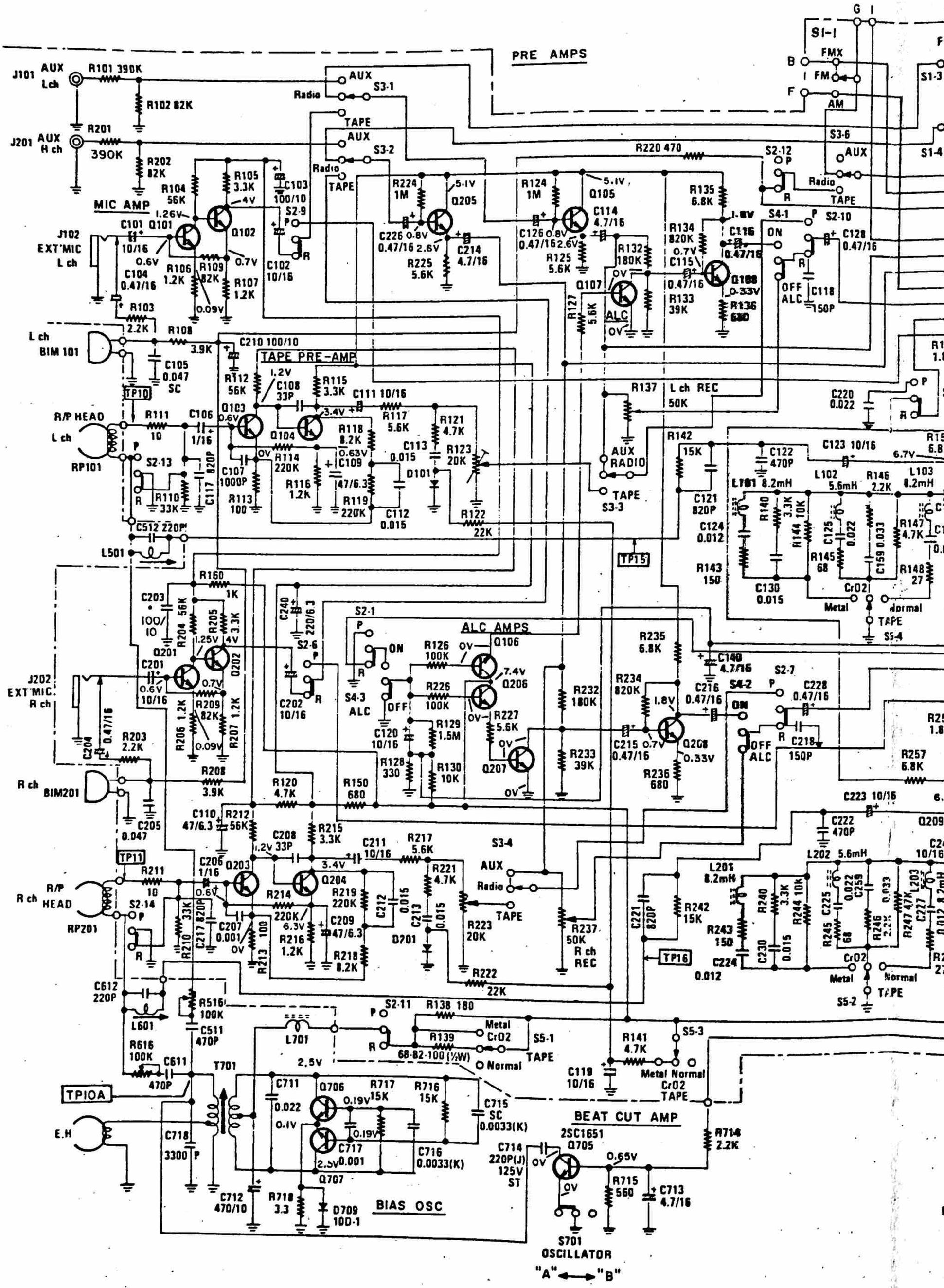


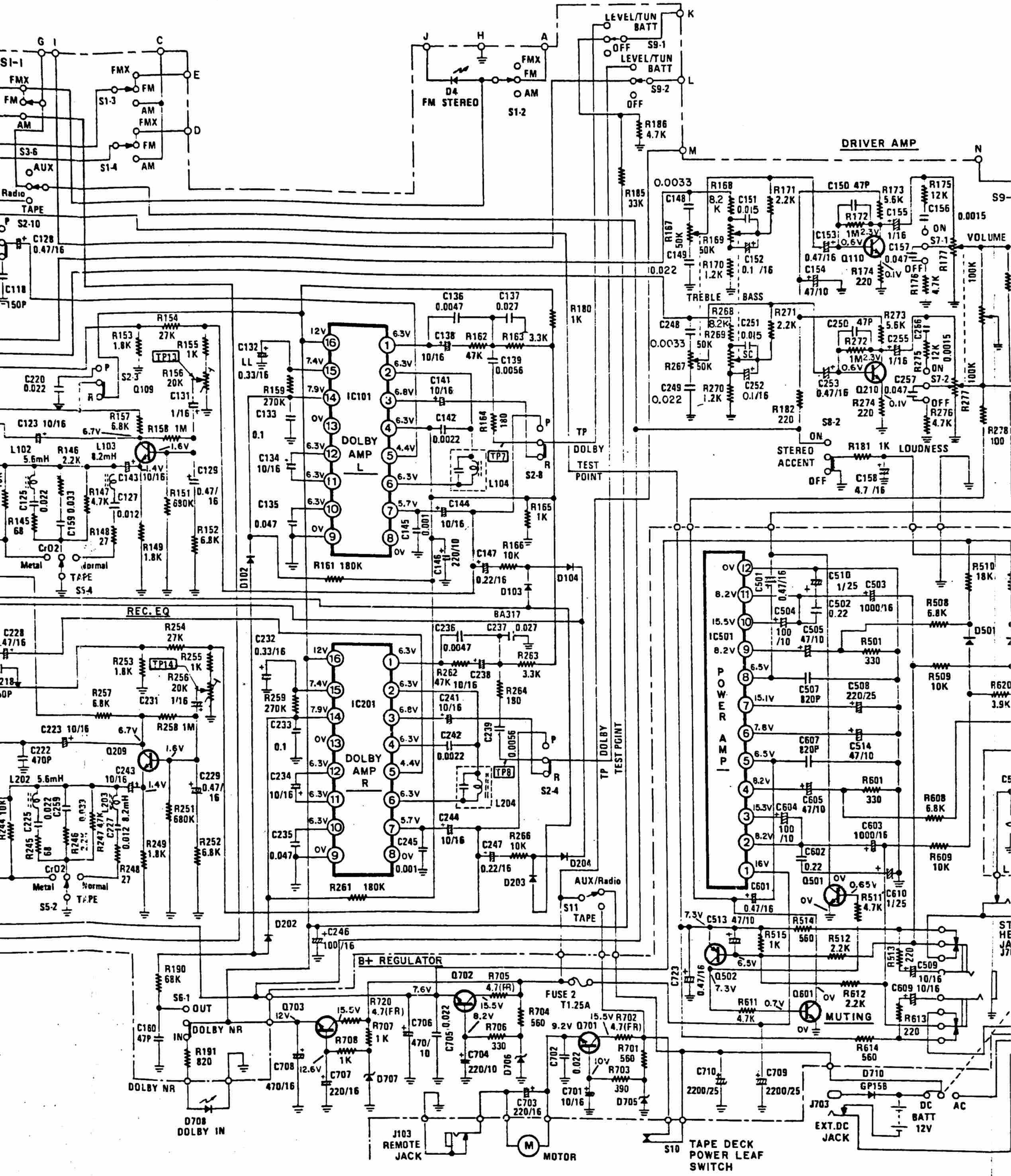
DIAGRAM - TUNER & METER 3-5286A



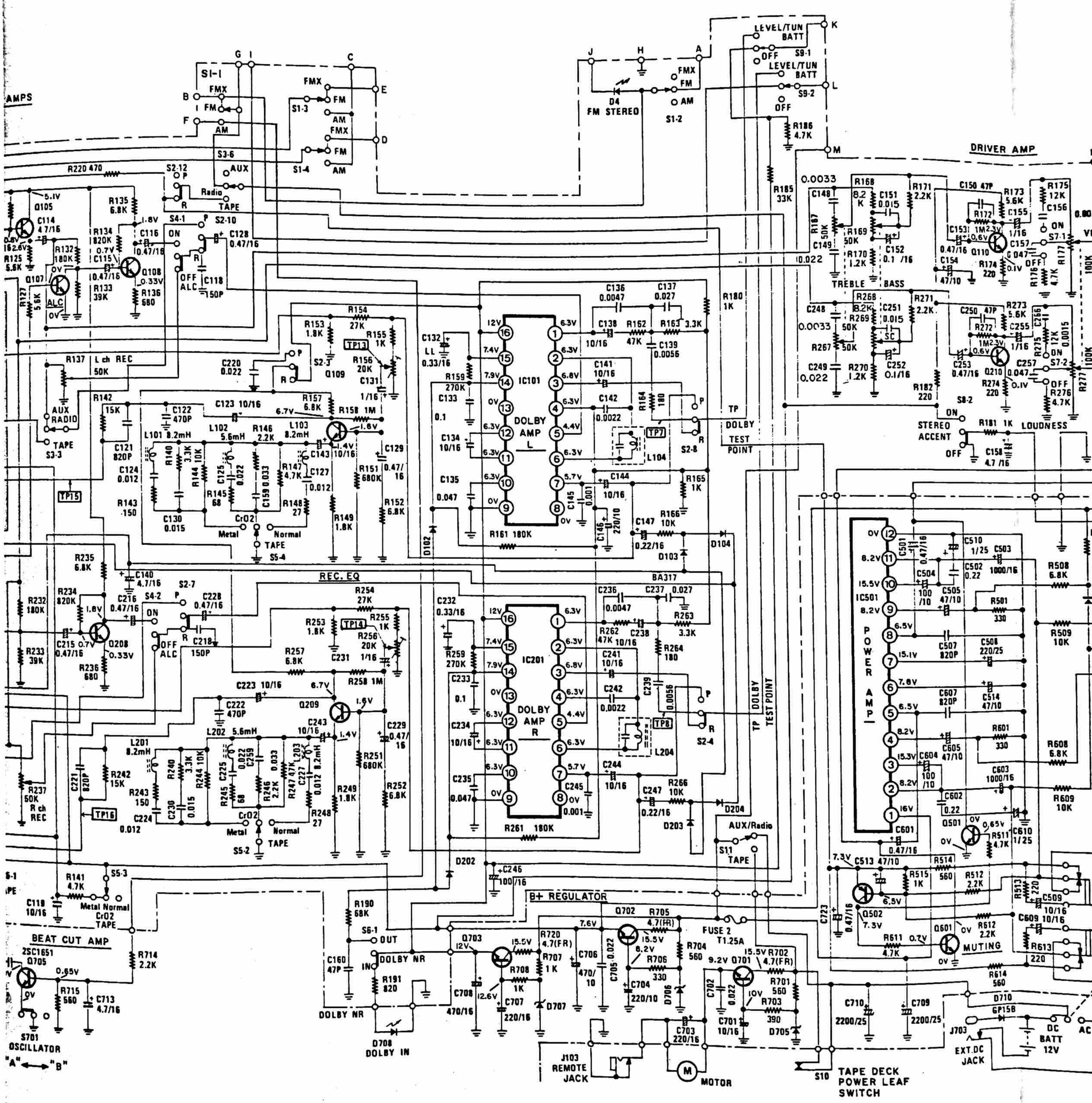
SCHEMATIC DIAGRAM - AUDIO/TAPE/DOLBY 3-5286A


PRE AMPS
MIC AMP
TAPE PRE-AMP
ALC AMPS
BEAT CUT AMP
BIAS OSC
J101 AUX Lch
J201 AUX Rch
J102 EXT'MIC Lch
J202 EXT'MIC Rch
BIM 101
BIM201
R/P HEAD Lch
R/P HEAD Rch
RP101
RP201
E.H
S1-1
S1-3
S1-4
S2-1
S2-2
S2-3
S2-4
S2-5
S2-6
S2-7
S2-9
S2-10
S2-11
S2-12
S2-13
S2-14
S3-1
S3-2
S3-3
S3-4
S3-5
S3-6
S4-1
S4-2
S4-3
S5-1
S5-2
S5-3
S5-4
S701
OSCILLATOR
"A" ↔ "B"
TP10
TP10A
TP11
TP15
TP16
Lch REC
Rch REC
AUX RADIO
TAPE
Metal CrO2
Normal
ALC
OFF
ON

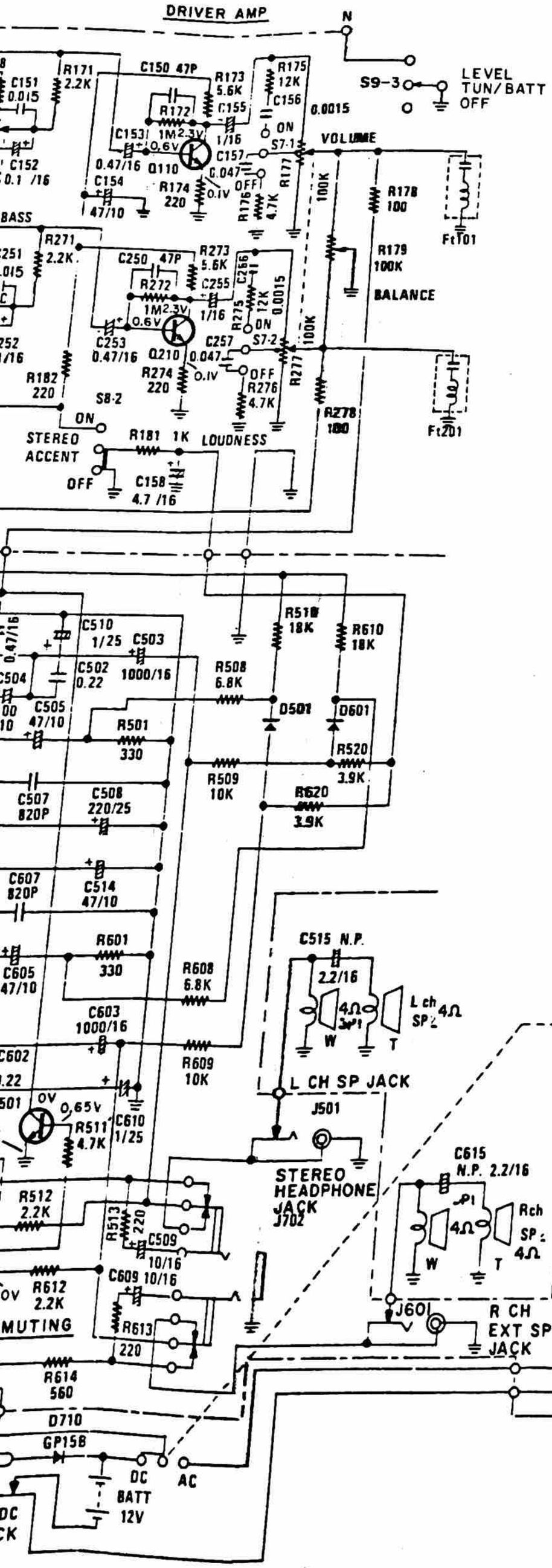
A



SCHEMATIC DIAGRAM - AUDIO/TAPE/DOLBY 3-5286A

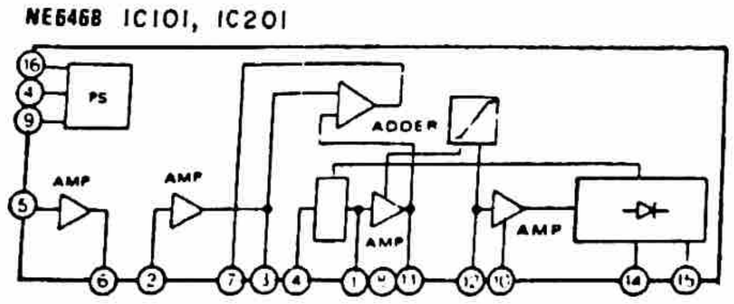


SCHEMATIC DIAGRAM - AUDIO/TAPE/DOLBY 3-5286A

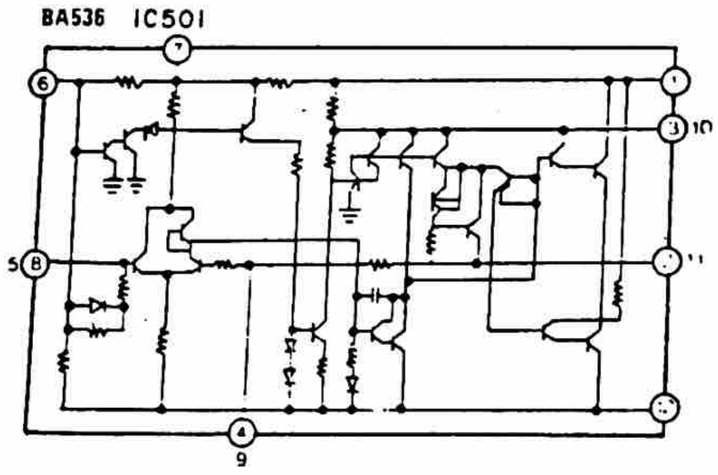


EQUIVALENT CIRCUIT

NE646B IC101, IC201



BA536 IC501



Q3, Q5, Q101 Q102, Q103, Q104, Q105 Q106, Q107, Q108 Q109, Q110, Q201, Q202 Q203, Q204, Q205 Q206 Q207 Q208 Q209 Q210, Q501, Q502, Q601, Q703, Q705, Q706, Q707.

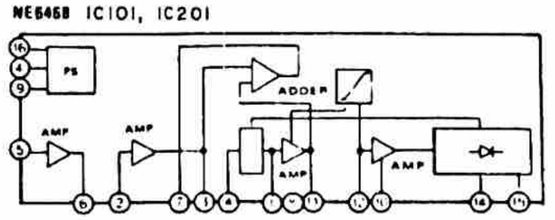
Q1 Q2 Q4.

Q701, Q702.

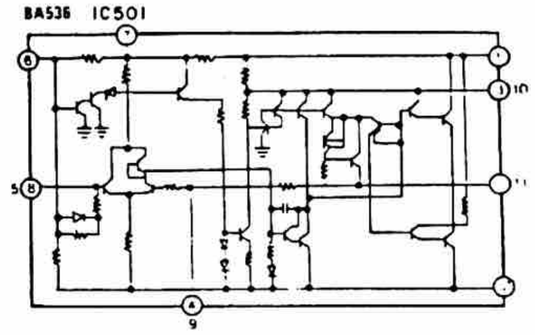
POWER SUPPLY

EQUIVALENT CIRCUIT

NE5468 IC101, IC201



BA536 IC501



Q3,Q5,Q101,Q102,Q103,Q104,Q105,Q106,
Q107,Q108,Q109,Q110,Q201,Q202,Q203,Q204,
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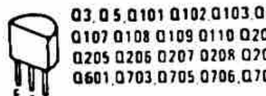
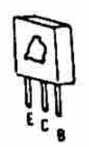
Q601,Q703,Q705,Q706,Q707



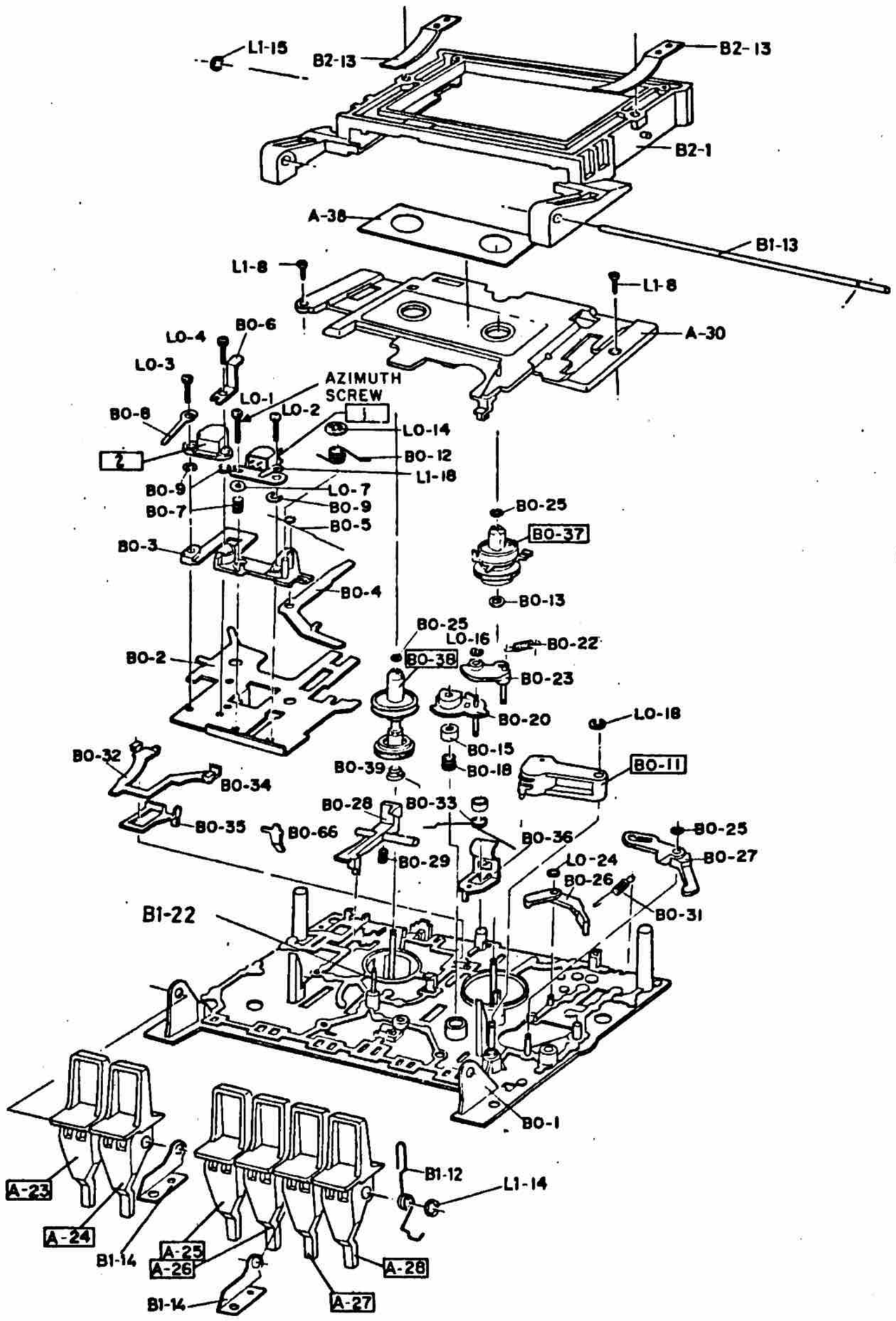
Q1,Q2,Q4.



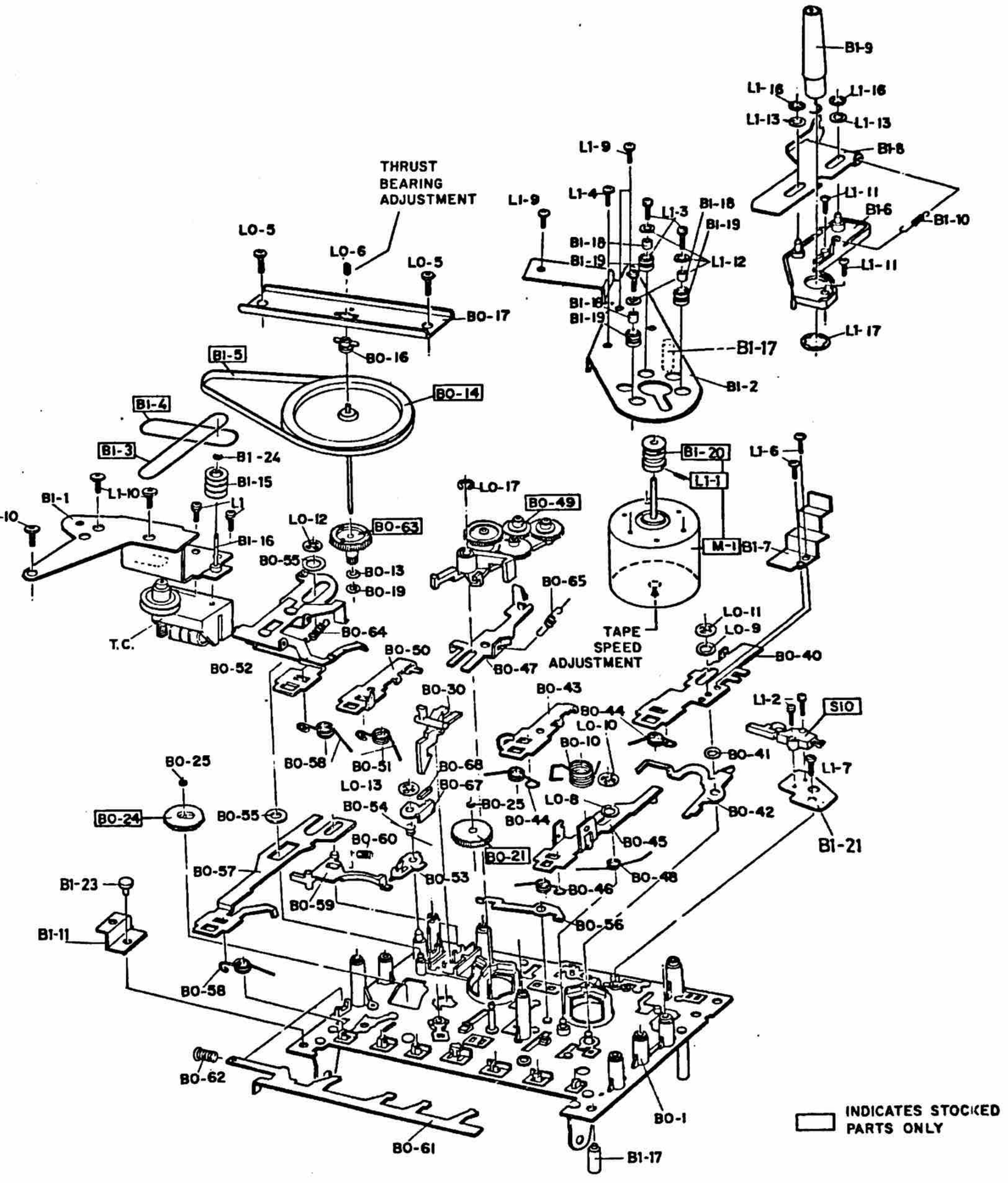
Q701,Q702.

POWER SUPPLY

SCHEMATIC DIAGRAM - AUDIO/TAPE/DOLBY 3-5286A



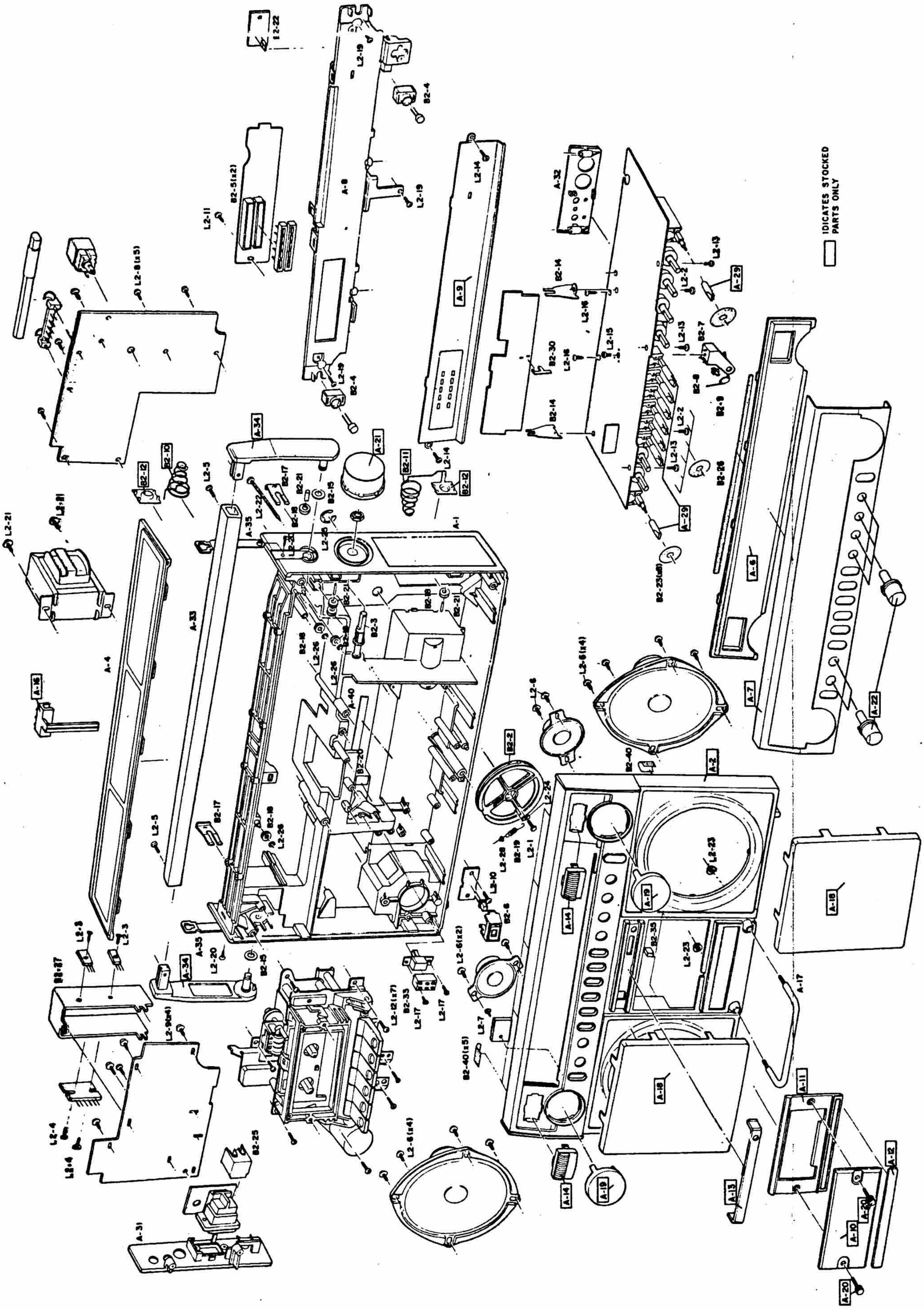
PARTS ABOVE BASEPLATE

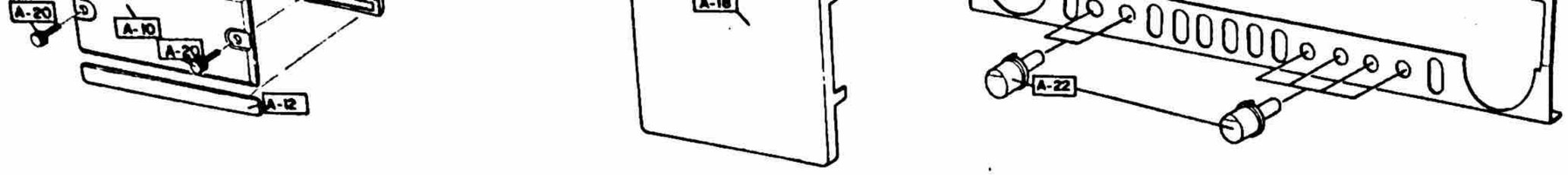


PARTS BELOW BASEPLATE

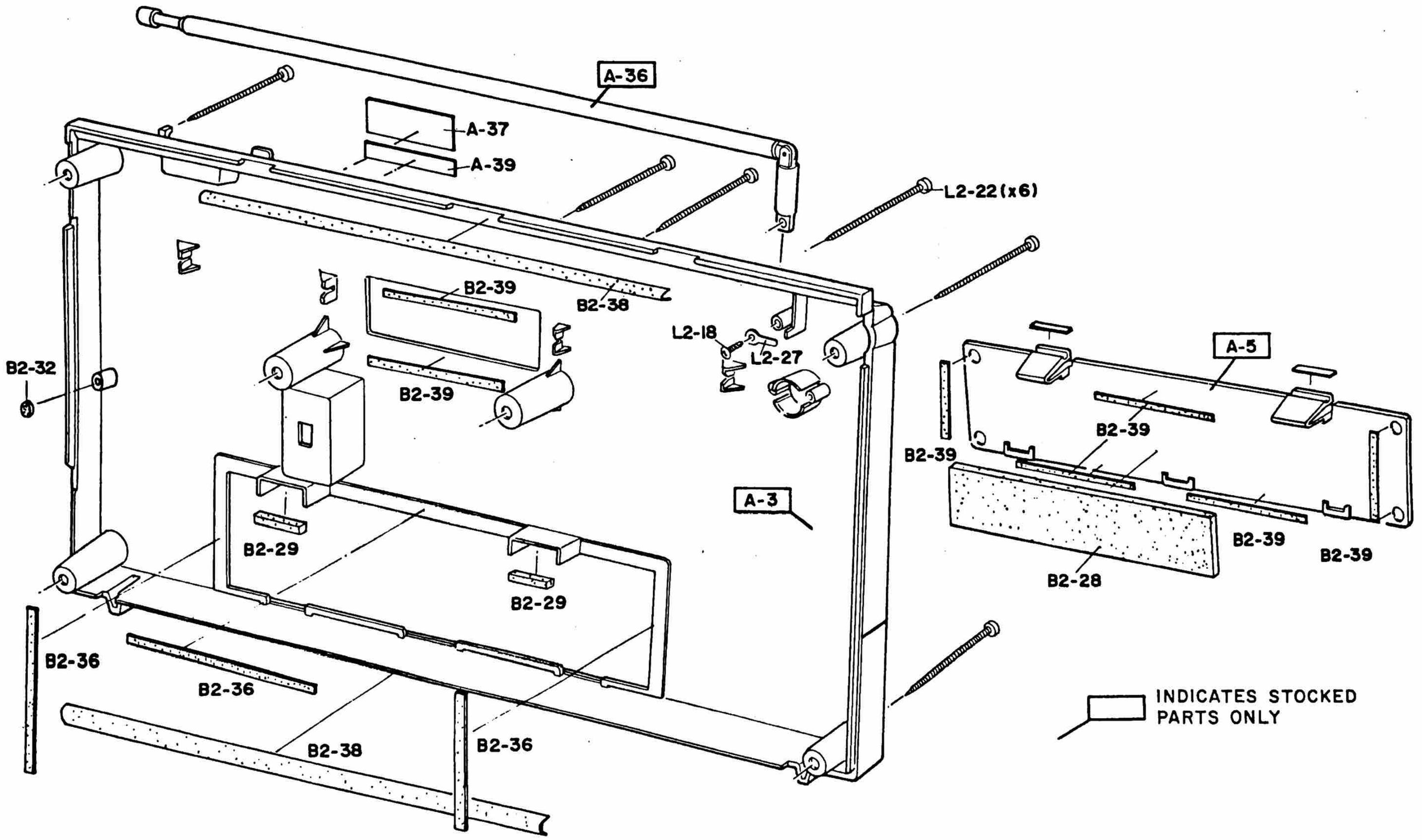
INDICATES STOCKED PARTS ONLY

EXPLODED VIEW - TAPE MECHANISM 3-5286A


EXPLODED VIEW - CABINET FRONT & APPEARANCE ITEMS 3-5286A
INDICATES STOCKED PARTS ONLY



EXPLODED VIEW - CABINET FRONT & APPEARANCE ITEMS 3-5286A



EXPLODED VIEW - CABINET BACK & APPEARANCE ITEMS 3-5286A

REPLACEMENT PARTS LIST - MODEL 3-5286A

TAPE MECHANISM

CAT. NO.	REF.	DESCRIPTION
EA43X1259	A-23	Record Button
EA43X1260	A-24	Play Button
EA43X1261	A-25	Rewind/Review Button
EA43X1262	A-26	Fast Forward/Preview Button
EA43X1263	A-27	Pause Button
EA43X1264	A-28	Stop/Eject Button
EA5X450	BO-11	Pinchroller Assembly
EA5X451	BO-14	Flywheel/Capstan
EA5X452	BO-21	Pulley
EA5X453	BO-24	Gear
EA5X454	BO-37	Take-up Reel Assembly
EA5X455	BO-38	Supply Reel Assembly
EA5X456	BO-49	Middle Pulley Assembly
EA2X1322	BO-63	Flywheel/Capstan Gear
EA1X817	B1-3	Counter Belt, Large
EA1X818	B1-4	Counter Belt, Small
EA1X819	B1-5	Drive Belt
EA39X414	S10	Power Leaf Switch
EA72X64	M-1	Motor w/pulley (Ref. B1-20) & pulley set screw (Ref. L1-1)
EA62X284	1	Play/Record Head
EA62X285	2	Erase Head

CABINET, CHASSIS & APPEARANCE

CAT. NO.	REF.	DESCRIPTION
EA98X787	A-2	Cabinet Front Assembly w/ Dial Crystal (Ref. A-6) Escutcheon (Ref. A-7) Counter Window (Ref. A-13) Speaker Grille (Ref. A-18) Speaker Grille (Ref. A-19)
EA98X788	A-3	Cabinet Back
EA9X532	A-5	Battery Lid Assembly
EA90X276	A-9	Dial Scale
EA90X277	A-10	Cassette Lid Window
EA9X533	A-11	Cassette Door
EA4X847	A-12	Cassette Door Medallion
EA4X848	A-14	Microphone Grille
EA6X382	A-16	Dial Pointer
EA4X849	A-18	Speaker Grille f/Woofer
EA4X850	A-19	Speaker Grille f/Tweeter
EA4X851	A-20	Thumb Screw f/Cassette window
EA43X1257	A-21	Tuning Knob
EA43X1258	A-22	Knobs f/Volume, Bass, Treble, Balance, Record level controls
EA43X1265	A-29	Select Lever Knobs f/Power, ALC, Meter, Dolby, Tape Stereo Accent, Loudness, and Band select switch controls
EA4X846	A-34	Handle Holder
EA82X72	A-36	FM Whip Antenna
EA6X383	B2-2	Dial Drum
EA2X1319	B2-10	Neg. Battery Spring
EA2X1320	B2-11	Neg. Battery Contact Spring
EA2X1321	B2-12	Pos. Battery Terminal

ACCESSORIES

5-1051	Patchcord Kit	
5-1053	Microphone	
5-1055	Dynamic Pencil Microphone w/on-off switch	
5-1056	Telephone Pick-up	
5-1057	Footswitch	
5-1060	Remote Switch	
5-1062	Car Adapter, 12V DC	
5-1300	Stereo Headphone	
5-1715	Tape Care Kit	
5-1723	AC Power Cord	
5-1768	Carry Strap	
5-1827	220V AC, Power Cord Adapter	

ELECTRICAL

CAPACITORS

	C1,3	27 Pf, 50V	(C)
	C2,108,208	33 Pf, 50V	(C)
	C4,5,10,13,15 16,17,18,20,24 31,35,63,66,220	0.022 MF, 25V	(C)
EA30X89	C6,7,27,30,36, 37,50,58	Tuning Capacitor	(PVC)
	C8	22 Pf, 50V	(C)
	C9,30	2 Pf, 50V	(C)
	C11	330 Pf, 50V	(C)
	C12	5 Pf, 50V	(C)
	C14	0.01 MF, 25V	(C)
	C19,44,103, 210,504,604	100 MF, 10V	(E)
	C21,22,41,43, 49,51,135,235	0.047 MF, 25V	(C)
	C23	100 Pf, 50V	(C)
	C25,47,114, 140,158,214 301,401,713	4.7 MF, 16V	(E)
	C26,125,225, 711	0.022 MF, 50V	(M)

Capacitors (Cont'd)

C28,55,147, 247	0.22 MF, 16V	(E)
C29,39,64	3 Pf, 50V	(C)
C32	22 Pf, 50V, NPO	(C)
C33	10 Pf, 50V, NPO	(C)
C34	33 Pf, 50V, NPO	(C)
C38	20 Pf, 50V, NPO	(C)
C42,101,102, 111,119,120, 123,134,138, 141,143,144, 201,202,211, 223,234,238, 241,243,244, 302,402,509, 609,701	10 MF, 16V	(E)
C45,149,249	0.022 MF, 25V	(M)
C46,56,104, 115,116,126, 128,129,153, 204,215,216,	0.47 MF, 16V	(E)

GENERAL ELECTRIC

REPLACEMENT PARTS LIST - MODEL 3-5286A

ELECTRICAL

CAT. NO.	REF.	DESCRIPTION	
Capacitors (Cont'd)			
	226,228,229, 253,501,601 723	0.47 MF, 16V	(E)
	C48,154,505 513,514,605	47 MF, 10V	(E)
	C52, 53	0.039 MF, 25V	(C)
	C54	500 Pf, 50V	(S)
	C57,65,106, 131,155,206, 231,255	1 MF, 16V	(E)
	C59,60	0.0022 MF, 25V	(M)
	C61,62	0.22 MF, 16V	(E)
	C105,157, 205,257	0.047 MF, 25V	(M)
	C107,145, 207,245	0.001 MF, 50V	(C)
	C109,110,209	47 MF, 6.3V	(E)
	C112,113,151, 212,213,251	0.015 MF, 50V	(M)
	C117,121,130, 217,221,230, 507,607	830 Pf, 50V	(C)
	C118,218	150 Pf, 50V	(C)
	C122,222,511, 611	470 Pf, 50V	(C)
	C124,127	0.012 MF, 50V	(M)
	C132,232	0.33 MF, 16V	(E)
	C133,233	0.1 MF, 25V	(M)
	C136,236	0.0047 MF, 50V	(M)
	C137,237,	0.027 MF, 50V	(M)
	C139,239	0.0056 MF, 50V	(M)
	C142,242	0.0022 MF, 50V	(C)
	C146,240,704	220 MF, 10V	(E)
	C148,248,715, 716	0.0033 MF, 25V	(M)
	C150,160,250	47 Pf, 50V	(C)
	C152,252	0.1 MF, 16V	(E)
	C156,256	0.0015 MF, 25V	(M)
	C159,259	0.033 MF, 50V	(M)
	C246	100 MF, 16V	(E)
	C303	10 MF, 25V	(E)
	C304,404	1 MF, 50V	(E)
	C502,602	0.22 MF, 50V	(M)
	C503,603	1000 MF, 16V	(E)
	C508	220 MF, 25V	(E)
	C510,610	1 MF, 35V	(T)
	C512,612	220 Pf, 50V	(C)
	C515,615	2.2 MF, 16V, N.P.	(E)
	C702,705,719, 720,721,722	0.022 MF, 50V	(C)
	C703,707	220 MF, 16V	(E)
	C706,712	470 MF, 10V	(E)
	C708	470 MF, 16V	(E)
	C709,710	2200 MF, 25V	(E)
	C714	220 Pf, 125V	(S)
	C717	0.001 MF, 25V	(M)
	C718	3300 Pf, 125V	(S)

(C) Ceramic (E) Electrolitic (M) Mylar
(S) Styrol (T) Tantal

CAT. NO.	REF.	DESCRIPTION
COILS & TRANSFORMERS		
E61X333	L4	FM IF
E83X158	L5	AM Antenna
EA35X172	L6	AM Osc.
EA35X194	L7	FM Osc.
EA56X67	L8,9	19/38 KHz Trap
EA56X68	L10,11	19/38 KHz Trap
EA36X600	L101,103,201, 203	Trap, 8.2 uH
EA36X601	L102,202	Trap, 5.6 uH
EA56X69	L104,204	Trap Coil
EA56X70	L501,601	Record Bias Trap
EA36X602	L701	Bias Indicator, 22 uH
EA61X334	T1	1st FM IF
EA61X335	T2	1st AM IF
EA61X336	T3	2nd AM IF
EA35X195	T701	Bias Osc.
EA88X246	T702	AC Power Transformer
DIODES		
EA16X91	D1,101,102 103,104,201, 202,203,204, 501,601	Diode, IN4148
EA16X463	D2	Vari-Cap Diode, SD116
EA16X112	D3	Varistor, KB265
EA16X336	D4	FM Stereo LED, SLB26 UR
EA16X239	D301,302, 303,304,305, 401,402,403, 404,405	Meter LED, 5 gang
EA16X464	D701,702, 703,704,710	Rectifier, GP15 BL
EA16X184	D705	Zener, RD10 EB3
EA16X438	D706	Zener, RD8.2 EB3
EA16X466	D707	Zener, RD13 EB3
EA16X465	D708	Dolby LED, GL9 PR4
EA57X14	D709	Diode, 10D-1
TRANSISTORS & INTEGRATED CIRCUITS		
EA15X472	Q1	FM Rf, MPS9426B
EA15X472	Q2	FM Conv, MPS9426C
EA15X474	Q3	AM Conv, HIT9011G
EA15X472	Q4	FM Osc., MPS9426B
EA15X475	Q5	AGC Amp, HIT9014C4
EA15X476	Q101,102, 201,202	Mic. Amp, HIT9014NC6
EA15X476	Q103,104, 203,204	Tape Pre Amp, HIT9014NC6
EA15X476	Q105,205,	Audio Pre Amp, HIT9014NC6
EA15X478	Q106,107, 206,207	ALC Amp, HIT9014C5
EA15X476	Q108,208	ALC Amp, HIT9014NC6
EA15X476	Q109,209	Tape EQ. Amp, HIT9014C6
EA15X476	Q110,210	Audio Amp, HIT9014C6
EA15X479	Q501,601	Audio Muting, HIT8050B
EA15X480	Q502	Audio Muting HIT9015B
EA15X464	Q701	Motor B+ regulator, MJE9400
EA15X464	Q702	B+ regulator MJE9400

REPLACEMENT PARTS LIST - MODEL 3-5286A

CAT. NO.	REF.	DESCRIPTION
TRANSISTORS & INTEGRATED CIRCUITS (Cont'd)		
EA15X479	Q703	Dolby B+ regulator, HIT8050C
EA15X481	Q705	AM Beat Osc., 2SC1651Q
EA15X479	Q706,707	Bias Osc. Amp, HIT8050C
EA33X8573	IC1	FM/AM IF/AM DET, HA12413
EA33X8539	IC2	MPX Amp, BA1320
EA33X8574	IC101,201	Dolby Amp, NE64614B
EA33X8575	IC301,401	Level Meter Amp, IR2EO2
EA33X8576	IC501	Audio Power Amp, BA536
SWITCHES		
EA39X409	S1	Band Selector Switch
EA39X410	S2	Play/Record Switch
EA39X411	S3/11	Power/Aux-Radio-tape Switch
EA39X413	S4	ALC On/Off Switch
EA39X409	S5	Tape Select Switch
EA39X412	S6	Dolby On/Off Switch
EA39X412	S7	Loudness On/Off Switch
EA39X412	S8	Stereo Accent On/Off Switch
EA39X409	S9	Meter Level Selector Switch
EA39X414	S10	Tape Deck Power Leaf Switch
	S11	(Part of S3)
EA39X415	S12	Voltage Selector Switch
EA39X343	S701	AM Osc. Beat Switch
JACKS		
EA41X295	J101,201	Aux-in Jack
EA41X296	J102,202	Remote Microphone Jack
EA41X297	J103	Remote On/Off Jack
EA41X298	J501,601	Ext. Speaker Jack
EA41X299	J701/703	AC Power Socket w/Ext. DC power jack
EA41X300	J702	Stereo Headphone Jack

CAT. NO. ELECTRICAL	REF.	DESCRIPTION
POTENTIOMETER & RESISTORS		
EA49X525	R123,156, 223,256,401	Semi-Fixed Resistor, 20K
EA49X606	R137,237	Record Level Controls, 50K
EA49X607	R167/267	Treble Control, 50K
EA49X607	R169/269	Bass Control, 50K
EA49X608	R177/277	Volume Control, 100K
EA49X609	R179	Balance Control, 100K
MISCELLANEOUS		
EA62X283	B1M101,201	Condenser Microphone
EA36X604	CF1,2	Ceramic Filter, 10.7 MHz
EA36X608	CF3	Ceramic Filter, 455 KHz
EA10X41	F1	Fuse, 2A
EA10X42	F2	Fuse, 1.25A
EA36X603	FT101,201	Bias Trap Filter
5-1723	MS-1	AC Power Cord
5-1827	MS-2	220V AC Power Cord Adapter
EA95X174	SP1	Speaker, Woofer 4Ω, 7W, 5 1/4"
EA95X175	SP2	Speaker, Tweeter 4Ω, 6W, 2"

NOTE: Parts not listed are Non-Stocked Items.

MS reference is for factory use only.

Replacement parts may be ordered from:

General Electric Company
National Parts Distribution
200 Crompton Street
P.O. Box 7025
Charlotte, N.C. 28217

GENERAL ELECTRIC

MODEL 3-5286 A
37-8007-81

GENERAL ELECTRIC

AUDIO SERVICE SUPPLEMENT

MODEL
3-5286A
AM/FM/FM STEREO
CASSETTE RECORDER

File Tab 3

THIS SUPPLEMENT CONTAINS UPDATED OR ADDITIONAL REPLACEMENT PARTS & SERVICE INFORMATION. FILE AHEAD OF THE SERVICE MANUAL FOR THIS MODEL.

I. 3-5286A (Late Production)

The 3-5286A (late production) version can be identified by date code of 1148 or later. This late production consist of two circuit changes listed below and should be filed with 3-5286A service manual.

1. Component value of R174 and R274 was changed from 220Ω to 120Ω.

2. A improved woofer speakers (SP1) is used for both channels and will be stocked under the original catalog number [EA95X174].

II. No Audio

Check for possible open fuse (F2) and R705 fusible resistor 4.7Ω @1/4 watt.